

Heating

Description

Fuel:

Gas is used to run the heating equipment. Your gas meter is located on west wall out side.

Efficiency:

Conventional Lennox furnace with 81000 BTU input and 61560 BTU out put 76% Efficiency is installed.(Model# G8Q3-80-3)



Type of Heating

Forced air furnace.

Equipment:

Age:

10 years approximately.

Likelihood of failure:

The likely hood of failure is medium. The unit should be serviced by a qualified contractor and repairs made as required. You should also budget to replace the unit in 0 to 5 years.

Flue pipes:

Flue pipes are made of metal.

Fuel shut off valve at:

Furnace.

Limitations

Heating system inspection limited by:

Exterior temperature prevented furnace from starting, therefore furnace could not be fully inspected. System shut off therefore could not be fully inspected. Automatic fuel feeds not tested, Determining winter comfort is beyond the scope of a visual inspection. Limited access to heat exchanger/heat shield (90 % not visible), Air conditioning working at time of inspection, therefore furnace could not be fully inspected.

Conditions

Furnace:

Life expectancy of furnace is between 15 to 20 year (depend on regular services). At the time of inspection your furnace is 10 years old and likelihood of failure is medium. Please budget for replace the furnace within 0 to 5 years.

Heat exchanger:

At the time of inspection there is no visible cracks or damage.



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Combustion air supply:

Inadequate. At the time of inspection I noticed provided combustion air in your small furnace room for furnace is inadequate. Recommended to provide adequate intake air for your furnace by a qualified HVAC contractor. Although if you plan to use the high efficiency furnace this defect will be solved by intake pipe.

Humidifier:

At the time of inspection I noticed some defect and negligence on your humidifier which is recommended to fix or repair by a qualified HVAC contractor.

- 1- Drained - not tested
- 2- Dirty
- 3- Rust
- 4-Inoperative

Air filter/electronic air filter:

Dirty and clogged recommended to change and clean by regular bases.



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Ducting:

Poorly connected was noticed behind the humidifier recommended to repair by a qualified HVAC contractor . clean ducts are healthier.



Service and test furnace/boiler before use -

service the furnace before each cold season.

Winter:

Additional Notes:

At the time of inspection old manual thermostat was installed recommended to replace with a digital thermostat this task by programming the on and off time for furnace will control and save the gas usage.



Read this.....

Forced air furnace heat exchangers sometimes crack on first use following a Summer of idleness.

On most furnaces, only a portion of the heat exchanger is visible without dismantling the unit. Home inspectors do not take furnaces apart, this can restrict the inspection. The latest high efficiency, direct vent furnaces are virtually inaccessible to see the heat exchanger, etc. except by qualified heating technicians.

Fault conditions cannot always be discovered by running the unit for a few minutes. You may, for instance, have to use the device for several hours for the fault condition to occur.

Regular, annual servicing is essential to maintain efficiency and ensure longevity.

Examine and where necessary, change and or clean all air filters in furnaces, heat recovery ventilators and air exchangers on a monthly basis. Dirty or clogged filters will significantly reduce the efficiency of most heating and ventilation systems and in extreme cases may be a fire hazard.

Always turn off electronic air filter or air exchange systems before attempting any maintenance.

Do not run Heat Recovery Ventilators (HRV's) in the Summer or when the air conditioning is on. These units will empty the conditioned air from your house while bringing in more humid air for the air conditioning to work on.

Any fault conditions noted relating to solid fuel appliances, create a potential fire hazard. **Repairs must be treated as a priority.**

Fuel fired appliances present a potential source of carbon monoxide. CO Detectors located either near the bedrooms and or where a bedroom shares a wall with a garage, or shares a wall with an attic space that abuts the garage.

Heating

Heating systems are generally designed specifically for each home or unit and take into account such factors as climate, orientation, insulation, windows, skylights and so on. It is beyond the scope of the home inspection to determine the adequacy of any heating system and the inspection therefore relates to installed components, their current condition and life expectancy.

Fuels and Costs

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Efficiency rating for various fuels are often contentious, as manufacturers will always create ideal, controlled, test conditions which you are unlikely to replicate at home.

The decision to change heating fuel for one that appears to be less expensive - from electricity to natural gas for instance - seldom takes into account the capital cost of the new equipment and its installation.

Installing a new gas furnace and the associated ducts (to replace baseboard heating for instance) will cost several thousand dollars. The fuel cost saving may not be as significant as the furnace manufacturer would have you believe and it may be ten years or more before you break even.

At this point the furnace is two thirds through its life expectancy (typical furnace life is about fifteen years). So now in five years you have to replace the furnace (again).

Of course there are other issues to consider - ducts allow you to install central air conditioning and/or an air exchange system of some sort. A gas furnace may be easier to control and may give you a more even heat throughout your home and so on.

Finally - remember that high efficiency furnaces cost a lot more than mid efficiency ones. So - if you have a flue pipe already - you might find its more cost effective to buy the mid efficiency variety. Typically the efficiency difference is about 5%. If your heating bill is \$1,000 a year and you save 5% - that's just \$50. So if the furnace costs \$1,000 more - it will take you 20 years, just to break even.

Don't rush into buying the latest technology or the most popular fuel of the day. Do the math - you may find its not quite as appealing as you first thought.

Be aware that other peoples heating bills can be meaningless. The person you are buying from may be a little old lady who keeps the heat at 80 degrees throughout the winter and is home all day. You on the other hand, may be an outdoor exercise family, who are at work all day and hate it hotter than about 65!

You will have to live there a year before you have a good idea of your energy costs. Use previous bills as a rough guide only.

Our cost calculator at the end of the heating section will help you compare different fuel system costs.

Electric heaters

Baseboard or fan heaters are common in many homes. Be sure that furniture and drapes are kept well clear. Do not use outlets that allow wires to drape across the heater surface.

Radiant heat is returning as a fashionable item, having fallen from favour for many years. Most installations use hot water pipes however electric installations are returning to popularity in many areas.

Furnaces and boilers

The main difference between furnaces and boilers is that furnaces heat air, where boilers heat water. The second difference is that furnace systems have ducts to circulate the air throughout the building (which you can also use for air conditioning), whereas boilers needs pipes and some sort of radiant surface to spread the heat.

With a boiler system, you will need separate ducts and an air handler (a big box with a fan in it) to use a central air conditioning system.

The **heat exchanger** is a core part of any furnace or boiler system and its failure usually means you have to replace the furnace or boiler. Some replacement heat exchangers are of course available, however the cost of replacement, especially when your take into account the labor, generally makes buying a new unit a better option.

The new unit will be more efficient and most come with some sort of manufacturers warranty - usually five years.

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In most cases only a small part of the heat exchanger is accessible to the home inspector, who will only comment on the visible areas. Annual inspections and servicing of all heating and cooling devices is highly recommended, both to ensure your safety and to provide the longest service life of the device.

Combustion air supply

Furnaces, boilers and other devices (water heaters for instance) that burn fossil fuels, need air to burn. In older homes this was provided through open basement areas and ill fitting doors and windows.

Today's homes are more air tight and indeed older ones that have been upgraded, need a separate combustion air supply. This can be as simple as a pipe open to the outside, that has one end near the furnace or boiler. Without this essential air supply, fossil fuel burning devices may create a carbon monoxide problem in your home.

Some direct vent, high efficiency furnaces have a combustion air supply built in. Remember though that if you have a gas or oil fired water heater (that is not direct vent), as well - it will still need the air supply.

Heat pumps

Heat pumps work by taking small amounts of heat from the surrounding air, water or from the ground, over and over again. The small amounts are then transferred into your home. Gradually, the heat builds up and the house gets warm.

Most systems allow you to reverse the process in summer and thus get air conditioning.

Heat pumps are very efficient however compared say, with a furnace and air conditioning - the capital costs are very high. If you are considering a heat pump system, be sure you intend to live in the house for many years to gain the full benefit. In some homes, heat pumps are tied in with electric or other higher running cost, heating systems.

Heat pumps need the same servicing as other primary heating systems. You would be well advised to take out a maintenance/service agreement for this type of system. Repairs need a specialist technician and are generally not cheap.

Heat recovery ventilators (H.R.V.s) and air exchangers provide controlled methods of allowing fresh, outside air into your home while simultaneously exhausting stale air.

They can make a significant contribution to the reduction of humidity in winter. Generally its not recommended that you use these devices in the summer months as they can increase the humidity by pulling in outside air, acting in direct opposition to any air conditioning you may have.

Oil tanks

Oil storage tanks rust from the inside - out, as well as from the outside - in. The problem is that oil floats on water, no matter what the proportions. So condensation, which is formed whenever the tank is filled, ends up on the bottom of the tank, rusting the metal.

Many jurisdictions have recently (within the last three or four years) adopted new regulations to cover the continued use of oil tanks, especially underground ones.

Most insurance companies will not insure homes with exterior tanks more than 15 years old and interior ones more than 25 years old. If the tanks age cannot be determined - typically you wont get insurance until the tank has been replaced.

Underground tanks can leak for many years without any noticeable increase in fuel usage. Any leakage is an environmental problem, which can be extraordinarily expensive to clean up.

Fuel oil suppliers are no longer permitted to re-fill unregistered underground tanks, nor any tank connected to a system that does not comply with current legislation. There is a schedule in many areas for the removal and replacement of underground tanks with start

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dates for older tanks as soon as October 2006.

Visit www.tssa.org for more information.

Oil piping must be protected where it is exposed between the oil tank and the furnace or water heater.

Humidifiers

Whole house humidifiers, as opposed to portable ones, can be a source of bacteria, mold and corrosion. The rotating drum style are particularly susceptible to this sort of problem if not maintained on a regular basis and can be a significant health hazard especially to the elderly, children and anyone suffering from any sort of respiratory illness.

The newer style "flow through" ones that work on a spray system, instead of a reservoir, are better although they use more water.

The need for a humidifier depends on your life style, the features of your home, (hardwood floors for instance) and whether you own a Steinway grand piano! In many cases - your normal living - breathing, taking showers, cooking and so on will generate sufficient moisture to keep your home comfortable.

A good average humidity is between 30 and 40%. You can buy an inexpensive humidistat from any hardware store. If you find your constantly being zapped by static electricity, its likely that you need some of the additional moisture that a humidifier is designed to provide.