

Gas Furnaces Sequence of Operation – HVAC Heating

Gas Furnaces Sequence of Operation – Why is furnace sequence of operation important? If a technician is to properly [troubleshoot a gas furnace](#) he needs to know the proper sequence of operation for the particular furnace he is troubleshooting.

Gas Furnaces Sequence of Operation – Troubleshooting

In gas furnace troubleshooting I believe the most common furnace to fail is the furnace that never gets regular furnace preventative maintenance performed. In most cases, you will not need to troubleshoot a furnace if regular maintenance is performed. An annual check of the furnace by a professional HVAC technician will help avoid many problems that arise in furnaces during the heating season when you really want to rely on your furnace.

Additionally, the best advice is to get your gas furnace a maintenance check and tune-up at least yearly so you will not have to worry about spending any time during the colder months in a cold house. Additionally, worrying if your pipes are going to break and so and so forth. Furthermore, it is truly hazardous to your health and you're dwelling not to have a reliable furnace so make sure you get regular furnace maintenance.

The Basics

Additionally, you need to understand the basics of furnaces. If there is any doubt whatsoever, it is best to call a professional and let them troubleshoot the furnace. After all, we are talking about fire and gas that can explode. When in doubt, leave it to the professionals to troubleshoot your furnace. A professional understands basic electricity and electrical components and controls, different types of gas systems, and these systems functions. They also understand all the necessary things to be wary about with safety. Additionally, and things to look for to stay safe whenever they are troubleshooting furnace systems.

Gas Furnaces Sequence of Operation - Type of Furnace

First, you need to know what kind of furnace it is that is having issues. Then you need to know the sequence of operation for the furnace if you are to troubleshoot the furnace properly. Knowing the sequence of operation will help in troubleshooting a gas furnace. Most HVAC technicians know in any troubleshooting scenario the furnace sequence of operation is important when troubleshooting gas furnaces.

Below, I will run through a few different scenarios for the gas furnace sequence of operation. Additionally, this will help you understand the importance of knowing the gas furnace sequence of operation when troubleshooting a gas furnace.

Gas Furnaces Sequence of Operation - The Standing Pilot Gas Furnace

The [standing pilot gas furnace](#) is the most basic of all modern gas furnaces. They are being replaced with newer electronic ignition gas furnaces. The standing pilot gas furnace remains in use. So it is necessary to troubleshoot a standing pilot gas furnace from time to time. With most standing pilot gas furnaces, you will have two major components in the gas furnace that will need to be checked for problems.

Furthermore, the air side of the standing pilot gas furnace consists of a blower motor, a few safety controls, and the [blower motor control](#). The gas side of the standing pilot gas furnace consists of a gas valve, a pilot assembly, the pilot and main burners, and the flue which exhausts the gases after the combustion process is complete. Finally, the sequence of operation for the typical standing pilot gas furnace goes like this:

1. A call for heat from the [thermostat](#)
2. The main valve in the [gas valve](#) energizes provided none of the safeties are tripped
3. Provided the [pilot light is lit](#) the main burner's fire and begin heating the combustion chamber
4. As the combustion chamber heats up the [fan limit control](#) slowly heats up. As it heats up it reaches cut-in in temperature for the blower
5. The blower kicks on and runs continuously
6. When the thermostat is satisfied the main burners turn off
7. The blower continues to run to dissipate extra heat out of the heat exchanger. When the temperature reaches the cut out setting on the fan limit control the fan stops. Finally, the heating sequence of operation is complete.

Standing Pilot

In the standing pilot gas furnace sequence of operation, there are many things going on. A good technician will follow the sequence through to determine where the furnace has a fault and make the repair.

Gas Furnaces Sequence of Operation - There are many different types of [electronic ignition high-efficiency gas furnaces](#) in use today. There some that are proprietary to various manufacturers. Then there are some manufacturers that use another manufacturer's controls for the electronic ignition part of the gas furnace. Additionally, Trane gas furnaces are an example of a company that makes their own electronic ignition gas controls for their furnaces.

Electronic Ignition

For this reason, when you troubleshoot an electronic ignition gas furnace you need to understand the sequence of operation. Especially for various types of electronic ignition systems. You also must understand how the controls work. A good technician can walk up to an electronic ignition gas furnace and figure out basic problems in a few minutes. Furthermore, for the [sequence of operation for an electronic ignition gas furnace see this article](#).

Of the different types of electronic ignition gas furnaces, there are direct fired gas furnaces and indirect fired gas furnaces. The indirect fired gas furnace uses a pilot light. The direct fired gas furnace lights the main burner ignition without a pilot light. The key in both systems is that each electronic ignition system has its very own method of proving the flame or proving the fire exists. Lastly, if no fire exists then the system shuts down to prevent gas from being spewed into a space where it can become very hazardous.