

The reasons to choose natural gas have always gone beyond performance. Natural gas heating assures you of comfort that's affordable and reliable. It's preferred by homeowners who want to help save energy, reduce emissions, and protect the environment. Contact the Southwest Gas Energy Specialists at **1-800-654-2765** to see if you have a connection for a natural gas heating system; for a list of heating, ventilating, or air conditioning (HVAC) contractors in your area; for energy saving tips, and special offers on high-efficiency natural gas appliances, or visit us at www.swgas.com.

This pamphlet provides information about natural gas heating. It is not intended to replace the manufacturer's use and care manual, which is the primary source of information for maintenance, cleaning, and safety of your heating equipment.

HEATING



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Naturally Warm

Your natural gas heating system is the heart of your home. You can depend on it to keep you warm and comfortable inside, regardless of the temperature outside. Natural gas furnaces deliver warm air without the cool draftiness often associated with the 90° air delivered with electric heat pumps. Gas-heated air is about 110° to 130°, which is warmer than your body temperature, so you feel comfortable. Besides providing warmth and comfort, using natural gas to heat your home can save you energy and reduce your carbon footprint.





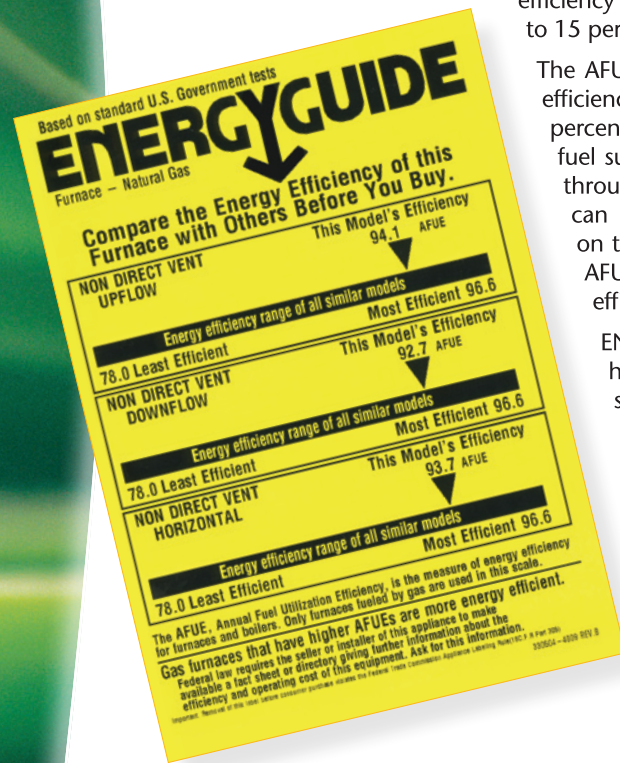
Energy Savings

If you have a 15-year-old or older central forced-air furnace, you can save up to 20 percent on your heating costs by replacing it with a new, energy-efficient model. New, high-efficiency natural gas heating systems are up to 98 percent efficient, and the ENERGY STAR® logo will help you identify energy-efficient heating equipment. While some ENERGY STAR qualified heating products may cost more initially, they can yield annual returns of 15-30 percent in lower energy bills, rewarding you with savings over the equipment's lifetime. ENERGY STAR qualified gas furnaces with an annual fuel utilization efficiency (AFUE) rating of 85 percent or greater, are up to 15 percent more efficient than standard models.

The AFUE is the measurement of a furnace's heating efficiency. For example, a furnace that has an 80 percent AFUE rating converts 80 percent of the fuel supplied to heat – the other 20 percent is lost through the flue or venting system. The AFUE rating can be found on the yellow EnergyGuide Label on the heating unit. Natural gas furnaces with an AFUE of 90 percent or better are considered high-efficiency according to ENERGY STAR standards.

ENERGY STAR qualified heating equipment helps you save energy and money without sacrificing performance. By using less energy, these products also help reduce greenhouse gas emissions.

The EnergyGuide Label is the yellow and black label placed on appliances to enable consumers to compare appliances' energy efficiency and energy consumption.





Direct Use of Natural Gas

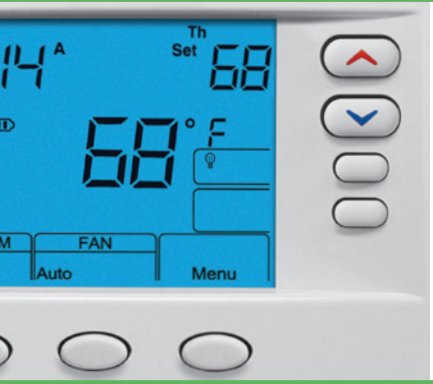
Did you know that natural gas is three times more efficient than using electricity to power appliances? With natural gas, about 90 percent of the energy is delivered directly to your home. Conversely, the electricity in your home is about 30 percent efficient because more than 70 percent of the source energy is lost in generating and delivering the electricity from the power plant to your home. And, natural gas has always been environmentally friendly. It is the cleanest-burning fossil fuel, producing up to 40 percent fewer greenhouse gas emissions than electric generation. As such it plays a central role in emerging initiatives to help protect our environment. When you consider efficiency, convenience, and the environmental benefits, the natural choice for heating is a natural gas furnace.

ELECTRIC



NATURAL GAS





Types of Equipment

Natural gas heating systems come in a variety of sizes and prices, allowing you to choose just the right system to fit your needs. Here are three of the most common types of natural gas heating systems:

Forced-Air Furnaces

There are two basic types of furnaces: packaged systems which contain the heating and cooling components in one unit, and split systems in which the heating and cooling units are separated. The location and overall design of your home determine the style of heating system.

Packaged Systems

Typically mounted on the roof of your home, a packaged system, often referred to as a gas pack, twin, dual, or combination system, includes natural gas heating and electric cooling components in one unit. It is connected directly to your home's ductwork.

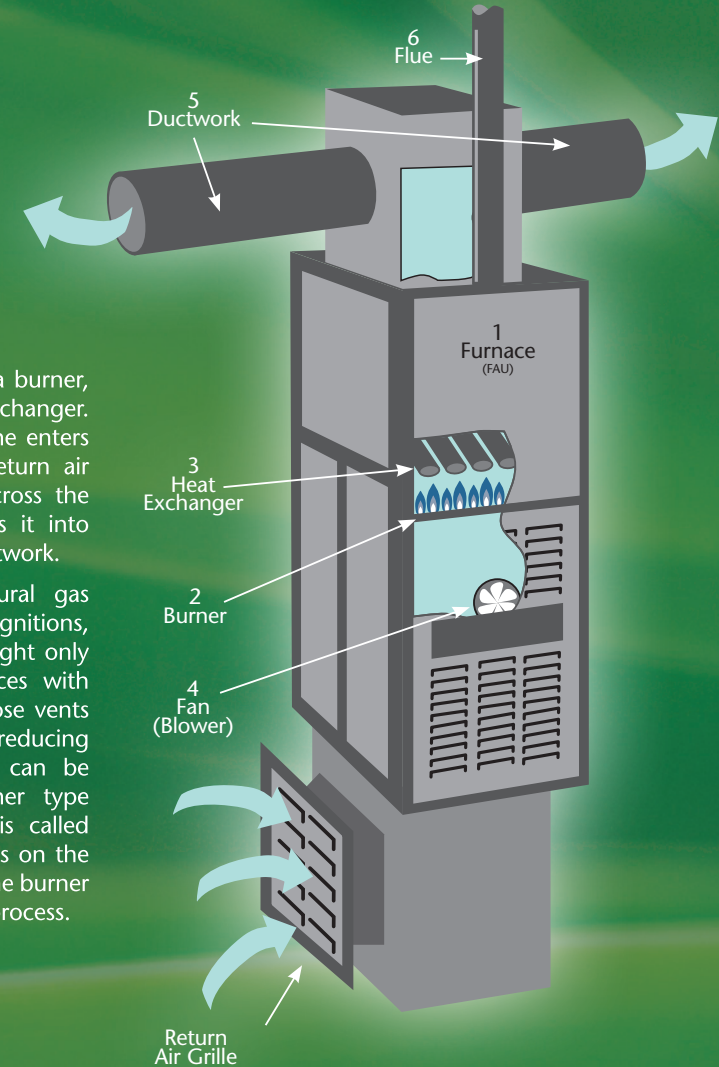
Split Systems

If you have a heating unit which is separated from your cooling unit, then your home is equipped with a split system. The furnace is usually located in your garage, attic, or an interior closet and the cooling unit is located outdoors, often on the ground. The heating portion of your system is called the forced air unit (FAU) or furnace (1). It contains the burner (2), the heat exchanger (3), and the fan or blower (4). Warmed air is distributed throughout your home via the ductwork (5). Combustion by-products are vented to the outside through the flue (6).

How Does A Natural Gas Furnace Work?

Natural gas is delivered to a burner, which heats up the heat exchanger. As air from inside your home enters the furnace through the return air grille, the fan blows air across the heat exchanger and moves it into your home through the ductwork.

Today's energy-saving natural gas furnaces have electronic ignitions, which ignite the gas pilot light only when it is needed. Furnaces with automatic vent dampers close vents when the burner turns off, reducing the amount of heat that can be lost through vents. Another type of furnace design option is called "induced draft," which relies on the natural flow of air through the burner to assist in the combustion process.





Combined Space & Water Heating

Hydronic Systems

While conventional heating systems rely on air circulation to distribute heat, hydronic systems use “radiant energy” to distribute heat. Radiant energy is heat that’s transferred from a warm element (radiators or flooring) to people and other objects in rooms rather than directly warming the air. Hydronic technology uses heated water and circulates it through radiators or tubing to distribute heat. Hydronic systems are sealed, which means there is no recirculation of air as there is with a forced-air furnace.

Combined Space and Water Heating

Combination water heating/space heating systems are among the most innovative and efficient systems on the market. In this system, hot water is generated by a natural gas burner and used for two purposes: 1) to heat your home and 2) to supply hot water for all your household needs. Combination water heating/space heating systems are available as two separate components or as a one-piece unit, which is ideal for small areas. Combination water heating/space conditioning systems are usually installed in the garage.

Hydronic Radiant Floor Heating

Hydronic radiant floor heating systems use a boiler to heat water and a pump to circulate the hot water in the pipes or tubing installed in a concrete slab. The pipes, embedded in the floor, carry heated water that radiates warmth to the surface of the floor.

Hydronic Radiant Floor Heating

Hydronic heating offers heat that does not make noise, provides even heat, and does not stir up allergens or dust within the home.



Natural Gas Room Heating

Requiring no chimney or ductwork, direct-vent and vent-free room heaters are an alternative to traditional heating systems. They are usually compact and less expensive than central furnaces that require ductwork. Direct-vent units vent directly to the outside and can be installed almost anywhere there is access to an outside wall.

Garage and Shop Heaters

A natural gas garage heater can make weekend projects more comfortable during cold weather months. A single unit is able to warm a two-car garage, or about 550 square feet. There are two basic types of garage and shop heaters: convection heaters, which use a heat exchanger and a fan to circulate the warmed air; and radiant heaters, which directly heat people and objects. Wall or ceiling mounted, they come with a thermostat control or a manual heat level selector.

Direct-Vent Baseboard Heaters

High-efficiency natural gas direct-vent baseboard heating is now available. Designed to heat entryways, room additions, transitional areas, and cold spots, it's also ideal for rooms with limited space or when retrofitting expensive electric baseboard heaters.

Direct-Vent Room Heaters

These small, direct-vent furnaces are an economical solution for heating studio apartments, rentals, and summer/winter cabins. They mount easily on any outside wall. The sealed combustion chamber draws air for combustion from outside and also exhausts the products of combustion to the outside.

Vent-Free Heaters

Vent-free or unvented gas space heaters do not require venting to the outside, because they have small burners that do not create combustion byproducts at a level that could be hazardous. These models contain an oxygen-depletion sensor (ODS) that will automatically shut off the gas supply to the heater if the oxygen in the room drops below a specified level. Because all of the heat produced is delivered into the room, they are very efficient. Requiring no electricity, they can supply emergency heat, even during power outages. Vent-free products include space heaters, stoves, fireplaces, fireplace inserts, and gas logs. While most states allow the installation of unvented gas heating appliances, some areas do not permit their use. Check with your local building code officials to see if they are approved for use in your area.

Garage & Shop Heater

Direct-Vent Baseboard Heaters



Purchasing Tips

- When buying a new gas furnace, choose an energy-efficient model. Look for a unit with a higher AFUE or an ENERGY STAR® label.
- The EnergyGuide Label will help you compare purchase prices and operating costs of different systems. (A higher efficiency system may cost a little more, but may pay for itself in operating cost savings in a short time.)
- When choosing a furnace, be sure to take into consideration the size, location, construction, and insulation of your home. Ask a qualified HVAC contractor to estimate the heat loss of your home and recommend an appropriate size for your new furnace.
- Obtain written estimates of all the work to be performed, including equipment costs, labor, and installation from two or more contractors. Some contractors may have very similar equipment, but from different manufacturers.
- Compare warranties on both the equipment and the installation.
- Be sure the models you are considering are design-certified by a nationally recognized laboratory that tests to national standards.
- The best furnace won't perform to its potential if it's not installed correctly. Proper installation by a licensed HVAC contractor is critical. After your furnace installation is complete, ask your contractor to provide the results of all tests specified in the manufacturer's installation instructions.



Glossary of Terms

Annual Fuel Utilization Efficiency (AFUE) – An industry agreed-upon standard that represents the percentage of fuel that is converted into usable heating energy.

British Thermal Unit (BTU) – The amount of energy required to raise one pound of water one degree Fahrenheit.

Direct Vent – A natural gas appliance designed so that all combustion air is derived directly from the outside, and all the flue gases are discharged to the outside through an exterior wall.

Ductwork – A series of ducts, elbows, and connectors that move air from one location to another.

Forced-Air Furnace – A central furnace equipped with a fan or blower which is the primary means of circulating the warmed air. These furnaces use ductwork and vents as a means of air distribution.

Flue – Natural gas central heating systems require venting to remove the byproducts of combustion (primarily water vapor and carbon dioxide) from the home. This passageway is called the flue.

Heat Exchanger – The part of a furnace built to efficiently transfer heat from combustion gases to the air blowing through the ductwork.

HVAC – Stands for Heating Ventilation and Air Conditioning. It is often used to describe a split-system that provides both heating and cooling.

SEER – The Seasonal Energy Efficiency Ratio is the cooling efficiency of your air conditioner or heat pump. The higher the SEER number, the more efficient the system is at converting electricity into cooling power.

Vent-Free – A vent-free gas heating appliance operates without a chimney, flue, or vent, so you can install a system just about anywhere without making a hole in the wall or roof.

