

HOME ENERGY GUIDE

FURNACE TYPES

There are several systems for providing heat to your home, depending primarily on the way heat is distributed throughout the building. Furnaces move heated air through ductwork and into rooms via registers. Boilers heat water and send it to room radiators through pipes. Space heaters provide heat to individual rooms. Different fuels provide different advantages and costs.

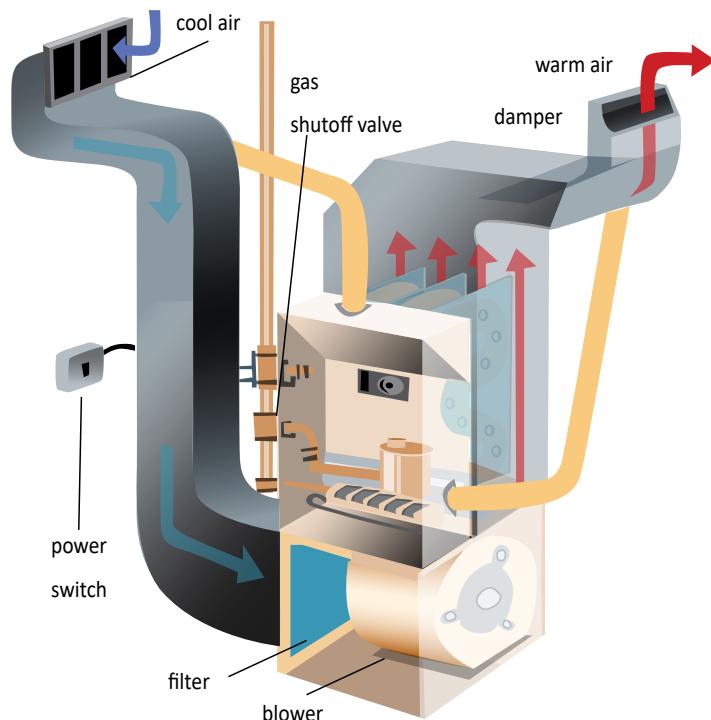
The most common equipment used for heating homes is a furnace, which heats air and distributes it throughout the home. Furnaces are usually controlled by a single, centrally located thermostat.

Furnaces heat air by using electricity or by burning a fuel (usually natural gas, propane, or fuel oil) and then distributing the warmed air to the various rooms in the house.

Forced-air furnaces are the most common type of furnace and blow heated air throughout the house with a fan through a network of ducts and registers. These systems provide the opportunity to control heat levels in individual rooms by operating registers and baffles in the ductwork.

Gravity-fed furnaces heat air which is distributed (without a fan) through registers in floors and walls. Because warm air rises and cool air falls, these systems rely on convection or gravity to distribute the heat throughout the house. Because of the age and design of these systems, they are usually very inefficient and tend to provide uneven temperatures throughout the house.

FORCED AIR FURNACE



Combustion safety

Three basic things are needed for making heat in a combustion system such as a furnace or boiler: fresh air, fuel, and a pathway for venting.

Older, less efficient systems combine air from inside the building with fuel in the combustion chamber and direct exhaust gasses to a chimney, where it is expelled to the outside.

However, this process can sometimes bring outside air in through cracks and other unsealed openings to replace the exhausted air. When air is pulled back down a chimney opening (backdrafting) it can lead to serious health and safety issues for the occupants. Odorless carbon monoxide and other gasses can cause flu-like symptoms or lead to unconsciousness and death.

Newer high efficiency systems eliminate these concerns through a “sealed combustion” process, which keeps dangerous combustion by-products away from the air in the home and the occupants. Regardless of what type of systems are in use, proper installation and maintenance of carbon monoxide detectors is required.