



NATURAL GAS WATER HEATERS



Natural gas water heaters are so reliable and easy to maintain that most people never think about their water heater, even though they use hot water several times a day.

Today's natural gas water heaters represent an extraordinary value in performance, reliability and low price, making them a preferred choice among homeowners.

The benefits of efficient natural gas water heaters

Natural gas water heaters offer many important benefits:

Quick recovery. Natural gas water heaters heat water fast so you have the hot water you need, when you need it.

Lower operating costs. Natural gas water heaters provide hot water efficiently so you save on operating costs. Save even more when you choose a high-efficiency model rather than a standard-efficiency unit.

Excellent safety record. Natural gas water heaters have been safely providing hot water in millions of homes for years. They stand on their safety record.

Save space. Fast recovery rates for natural gas water heaters means you can use a smaller tank and save space.

Installation options. There is a natural gas water heater for every situation, whether you are building a new home or simply remodeling.

Environmentally friendly. When energy conservation and environmental issues are a primary concern, clean-burning natural gas water heaters are the best way to heat water.

Reliability. Natural gas water heaters are so reliable and easy to maintain that most people never think about their water heater, even though they use hot water several times a day.

Flexible options for any situation



Atmospheric-vent



Power-vent



Direct-vent

Natural gas water heater options

Whether you are replacing an existing water heater, remodeling, or building a new home, there is a natural gas water heater to meet the needs of your situation. Here are the main types of natural gas water heaters, starting with the most basic unit.

Atmospheric-vent

These are the standard gas water heaters that have been serving millions of homeowners for years. They use room air for combustion and exhaust. The exhaust chimney is installed to a draft hood that sits slightly above the tank. These water heaters use “gravity” (rising warm air) to exhaust combustion by-products and are vented through the roof. Often the exhaust vent is connected to the furnace vent and they share the same chimney.

Benefits: The benefits of natural gas water heating include a compact unit design, quick recovery, an excellent safety record, low operating costs, high efficiency, and environmental friendliness.

Flammable vapor ignition resistance

In July 2003, manufacturers began adding flammable vapor ignition resistance technology to 30-50 gal. atmospheric-vent natural gas water heaters. The added safety measure, required by the federal government, helps prevent fires or explosions from vapors being ignited by the units. While such incidents are rare, especially in cold weather areas where water heaters are located inside the home rather than in garages, the new technology makes these models even safer. The same update is now required for 30-50 gal. power-vented units and all other models.

Power-vent

These water heaters are the same as the atmospheric models, but with a reengineered exhaust system. The exhaust vent is made from PVC plastic rather than metal, has a blower installed to assist the expulsion of combustion by-products, and can be vented through either the roof or a sidewall.

Benefits: This unit offers all the benefits of natural gas, plus flexible installation. It requires no chimney, chase or flue. Because of the power-assisted exhaust, it can be placed up to 40' from where it is vented through a sidewall, making it easy to fit in even the most cramped equipment rooms.

Direct-vent

Direct-vent units use no room air at all. Instead, the heater uses a “gravity” system to pull in outside air for combustion and to exhaust combustion by-products. These units can be vented through a sidewall.

Benefits: Direct-vent water heaters are particularly good for tight construction because they use outside air versus room air for both combustion and exhaust, so they operate independently of other exhaust systems in the house.

Powered direct-vent

A hybrid, this model combines the features of power- and direct-vent models. Only outside air for both combustion and exhaust is used, with a blower built into the exhaust flue. Because of the power-assisted exhaust, the unit can be placed up to 40 feet from a sidewall. It uses PVC plastic pipe as a venting material.

Benefits: This unit is perfect for air-tight construction and offers flexible installation.

Tankless or instantaneous

These models heat water as it passes briefly through the heater; no water is stored, so standby heat losses are lower. Tankless water heaters can be installed either centrally or at the point of use.

Benefits: Instantaneous water heaters are a good choice for homes with high efficiency gas furnaces that don't have chimneys.

Combination systems

These dual-purpose models feature a tank within a tank, one providing hot water for the family and the other providing warm water for space heating, such as a radiant floor system.

Benefits: Combination systems offer increased energy efficiency and reduced costs for whole house or room heating, plus all the benefits of natural gas water heating.

Make sure your water heater is installed by a licensed plumber or serviceperson, according to local codes and manufacturer's instructions.

Selecting a water heater

Water heating accounts for about 15 percent of your home's energy use so, when replacing your water heater, it's important to choose an efficient model. Operating costs with gas are typically about 50 percent lower than with electric; savings will vary depending on fuel costs and unit efficiency.

You can judge the efficiency of a model by its efficiency rate. Usually natural gas water heaters have an energy factor between .48EF and .56EF*, with the highest ratings going above .62EF up to .65EF. The higher the number, the higher the efficiency and the lower the operating costs. Where energy conservation and environmental issues are a primary concern, clean-burning natural gas water heaters are the best way to heat water.

Check the EnergyGuide label for an estimate of the water heater's annual operating cost; it will help you compare the annual cost of operation of various models.



Powered direct-vent

Features of energy-efficient gas water heaters include improved insulation, a more efficient burner system, refined flue baffles and more efficient heat transfer.

* EF, Energy Factor, is the ratio of annual useful energy in the heated water to the annual water heater energy consumption, i.e. the energy going into the water heater.

Choosing the right size water heater

A properly sized water heater will deliver the hot water you want when you need it. There are two ways to determine the appropriate size water heater for your home.

The first way depends on the number and ages of family members, how you wash dishes and clothes, and the number of bathrooms in your home. For example, the needs of a family of two with one bathroom and a clothes washer should be adequately met with a 30-gallon water heater. For every additional bathroom in your home, add another 3-1/2 gallons to the tank capacity. If you use an automatic dishwasher, add another five gallons to this total. These are general guidelines since no two families' hot water use are exactly alike; keep in mind your family's lifestyle and habits when estimating your family's hot water needs.

The second method to consider is the first-hour rating; it tells you the amount of hot water the water heater can deliver in one hour. Follow this procedure to use the first-hour rating:

1. Determine the hour of the day when you use the most water.
2. Use the table at right to find the quantity of hot water you use for each activity during that hour.
3. Add all the quantities for that hour. The total is your first-hour rating.
4. Choose a water heater with a first-hour rating close to the total amount of hot water you use during the hour you selected. The first-hour rating also includes the "recovery rate." This is a combination of how much water is stored in the water heater and how quickly the water heater can heat cold water to the desired temperature.



Activity	Hot water used
Automatic washer	25 to 40 gallons per load
Non-automatic washer	10 to 20 gallons per load
Dishwasher	5 to 10 gallons per load
Hand dishwashing	3 to 4 gallons
Tub bath	15 to 25 gallons
Shower	3 gallons per minute
Bathing an infant	2 gallons
Shaving	2 to 3 1/2 gallons
Shampooing	5 gallons
Hand washing	1 to 2 gallons
House cleaning	5 to 12 gallons
Food preparation	3 to 6 gallons



Caring for your natural gas water heater

- Keep the burner area free of dust and dirt.
- Store combustibles or flammables such as gasoline or paint away from the water heater.
- A gurgling noise when the burner is on is a sign of sediment buildup which can damage your water heater. To keep lime deposits and sediment from building up in your water heater, starting when it's new, every month drain several pails of water from the drain valve near the bottom of the water heater.

CAUTION: An older water heater which has not been regularly drained may already have lime deposits that make it impossible to completely close the drain valve after draining water from the tank as suggested. It may also cause a constant drip.

Relighting the pilot light

If the pilot light on the water heater goes out, shut off gas to the appliance. Do not use tools to turn the gas valve; use hand pressure only. Relight according to the manufacturer's instructions, usually found near the control on the lower part of the tank. If you have difficulty relighting, call a qualified appliance service technician or qualified heating contractor.

Safe water temperatures

The Consumer Product Safety Commission has identified hot tap water as a major cause of scald injuries. Children and the elderly are particularly vulnerable. The commission recommends water temperatures of 120°F to 125°F ("Low" or "L" on some thermostat dials) to avoid most scald injuries. To check your tap water temperature:

1. Let the hot water run from the bathroom faucet for one to three minutes.
2. Using a reliable thermometer, check the temperature of the water coming from the faucet.
3. Repeat the test in the kitchen sink and bathrooms in your home.

Turn your water heater thermostat to the lowest setting comfortable for you and your family. For most people, 120°F is sufficient and safe.

Today's dishwashers typically have booster water heaters to further heat water to the higher temperatures needed for dishwashing.

Conserve hot water

The simplest way to reduce energy use for water heating is to use less hot water.

Laundry: Use the shortest wash cycle, the lowest water temperature possible and a cold rinse.

Washing dishes: Scrape dishes before placing in the dishwasher. If rinsing is necessary, use cold water. If washing dishes by hand, turn rinse water on and off as needed.

Showers: Take short showers rather than baths. Install a flow-restricting shower head which can reduce flow by about 50 percent.

Leaky faucets: Promptly repair leaky faucets. A leak that fills a coffee cup in 10 minutes wastes 3,280 gallons of water a year.

Other tips:

- Never let water run continuously while brushing your teeth or shaving.
- When you need only a little water from the tap, use cold water. Hot water drawn into the pipes may never reach the tap and the heat is wasted.
- Wrap insulation on long stretches of pipe between your water heater and the point of use, and on pipes running through unheated areas.

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