



# Water Heater Components Glossary

This document provides a comprehensive glossary of water heater components and related terms. It covers various parts of both tank-type and tankless water heaters, safety features, and common issues. The glossary includes detailed descriptions and explanations for each term, helping homeowners and professionals understand the intricacies of water heating systems.

By: Hyde Park Plumbing

# Backdraft

Backdraft occurs when gas-fired water heater exhaust fumes spill back into the water heater or home. This can present a very serious hazard for your home and your family. Signs of backdraft include:

- Melted plastic on the draft hood
- Moisture on top of the hot water storage tank
- Corrosion on top of the tank

Causes of backdraft include (but aren't limited to) lack of a draft hood, sharp turn at the draft vent, or bent vent connectors.



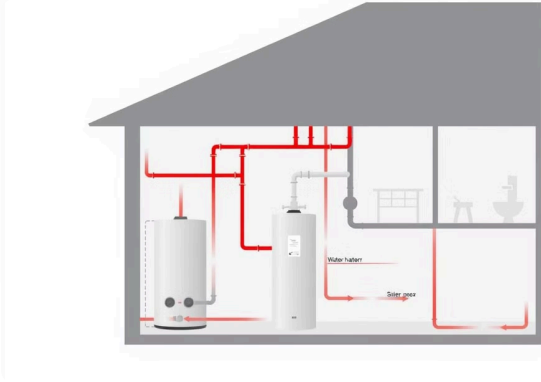
# Burner

The burner is a component inside of gas-fired water heaters that produce a flame. Its function varies depending on the type of water heater:

- In gas-fired tank-type heaters, the burner heats the hot water storage tank
- In tankless water heaters, the burner heats the heat exchanger



# Circulation Pump



## How It Works

A circulation pump operates by moving water through a closed-loop plumbing system, ensuring a constant supply of warm water to all fixtures, regardless of distance from the water heater.



## Improved Hot Water Delivery

Circulation pumps help eliminate the need to wait for hot water to travel from the heater to the faucet. This is especially helpful for homes with multiple bathrooms or long plumbing runs.

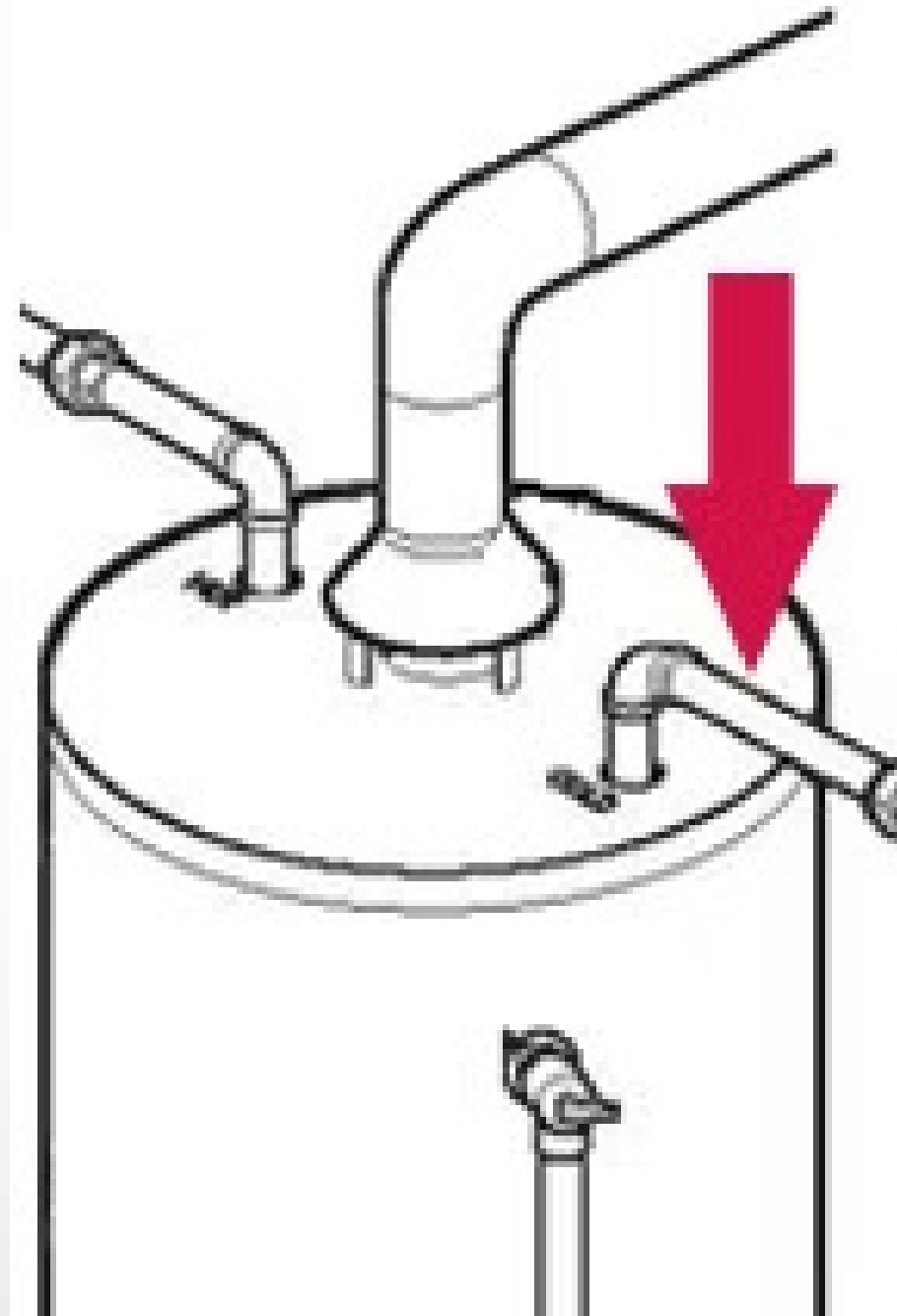


## Timer Control

Many circulation pumps have timers that allow you to program when the system is active, saving energy and reducing the amount of time the pump is running.

# Cold-Water Inlet Pipe

The cold-water inlet pipe is the pipe that carries cold water into a water heater system. It is an essential component of both tank-type and tankless water heaters, providing the water supply that will be heated for use throughout the home.



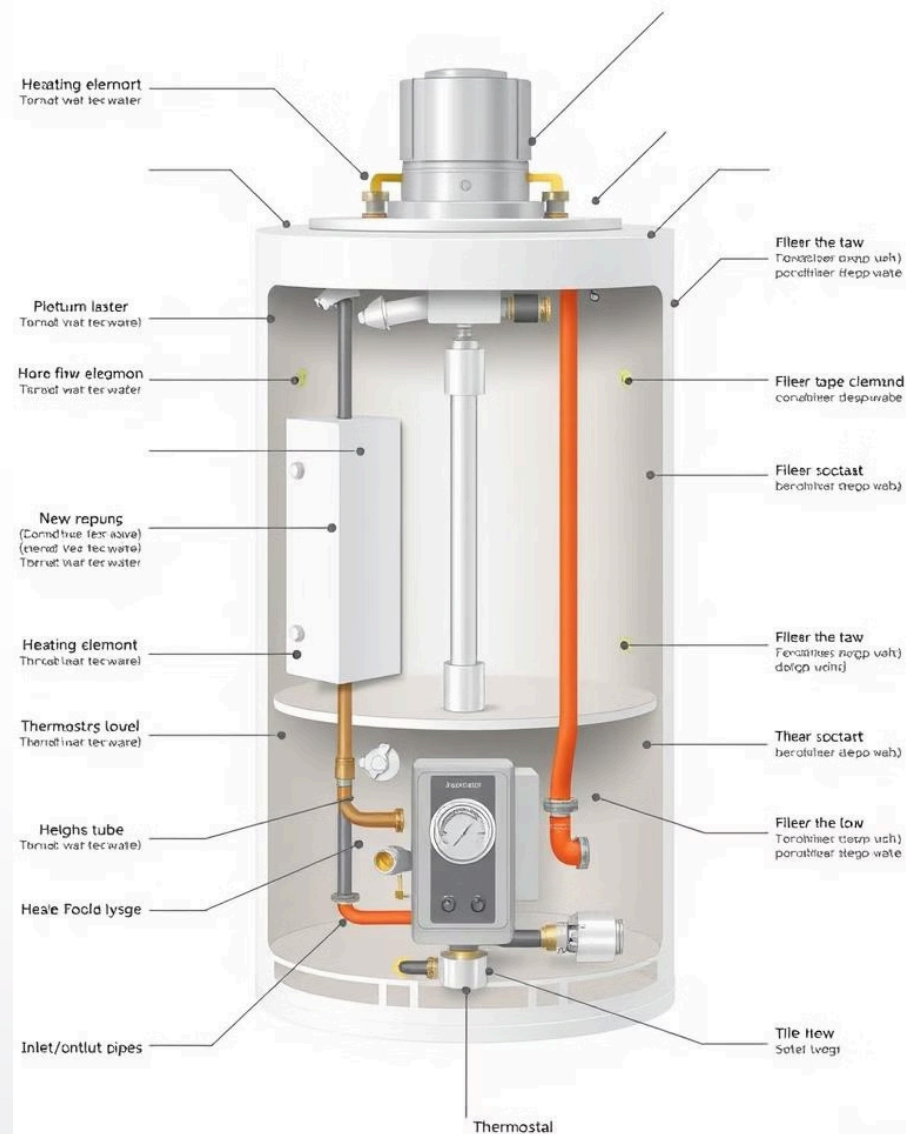
# Cold-Water Valve

The cold-water valve is a valve that switches the cold-water inlet pipe on and off. This valve is crucial for controlling the water supply to the water heater and is often used during maintenance or replacement of the water heater.



# Dip Tube

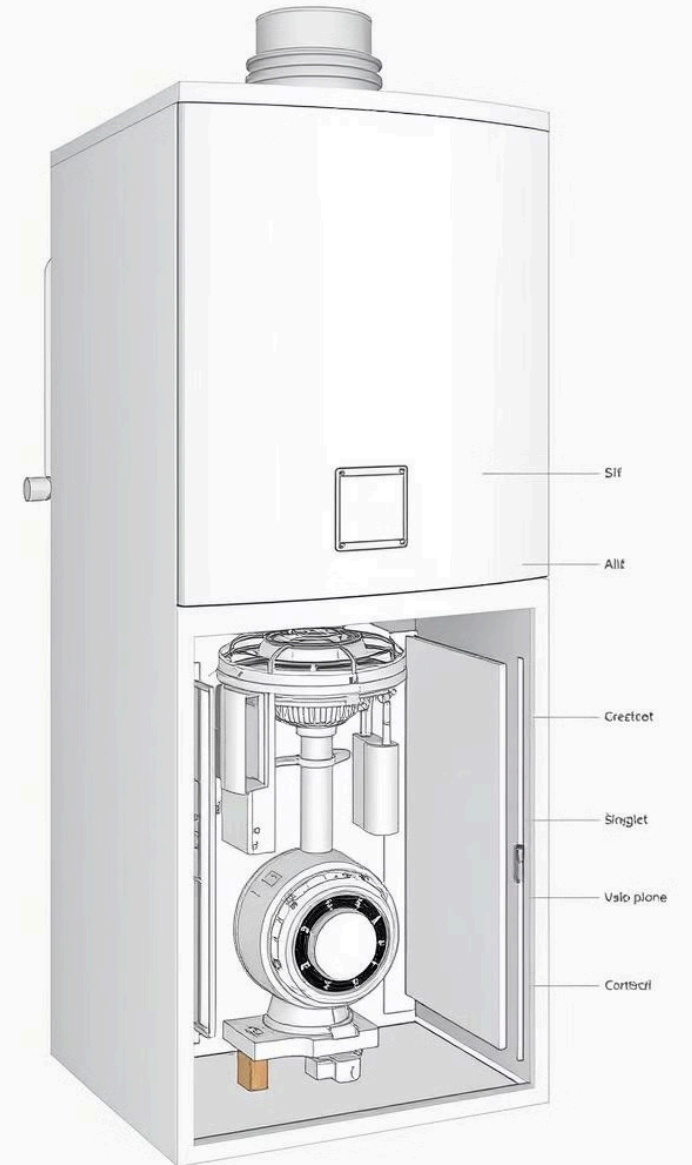
The dip tube is a pipe that deposits cold water into the hot water storage tank. In tank-type water heaters, the dip tube ensures that incoming cold water is directed to the bottom of the tank, where it can be heated efficiently without mixing with the hot water at the top of the tank.





# Draft Hood

The draft hood is a round, funnel-shaped piece of metal that wraps around the vent pipe above gas-fired water heaters. Its primary function is to prevent combustion exhaust from spilling into the home or back into the water heater, ensuring safe operation of the water heater and protecting the home's air quality.





# Drain Cock

The drain cock is a water spigot located at the bottom of hot water storage tanks. Its primary purpose is to flush the tank, which is an important maintenance task that helps remove sediment and improve the efficiency and longevity of the water heater.

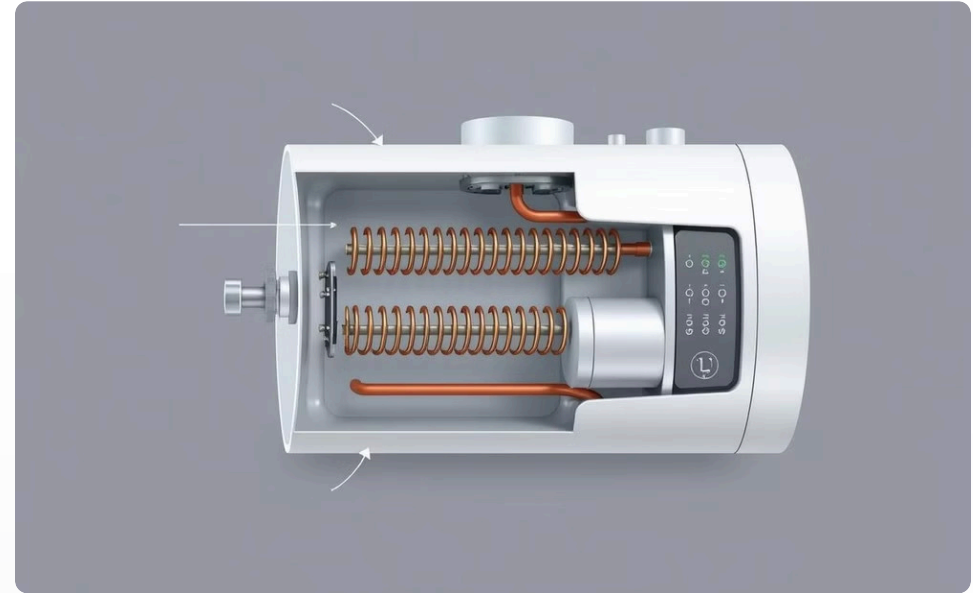


# Electrical Resistance Heating Elements



## Heating Elements

Electrical resistance heating elements are rods inside of electric tank-type water heaters that convert electrical energy into heat.

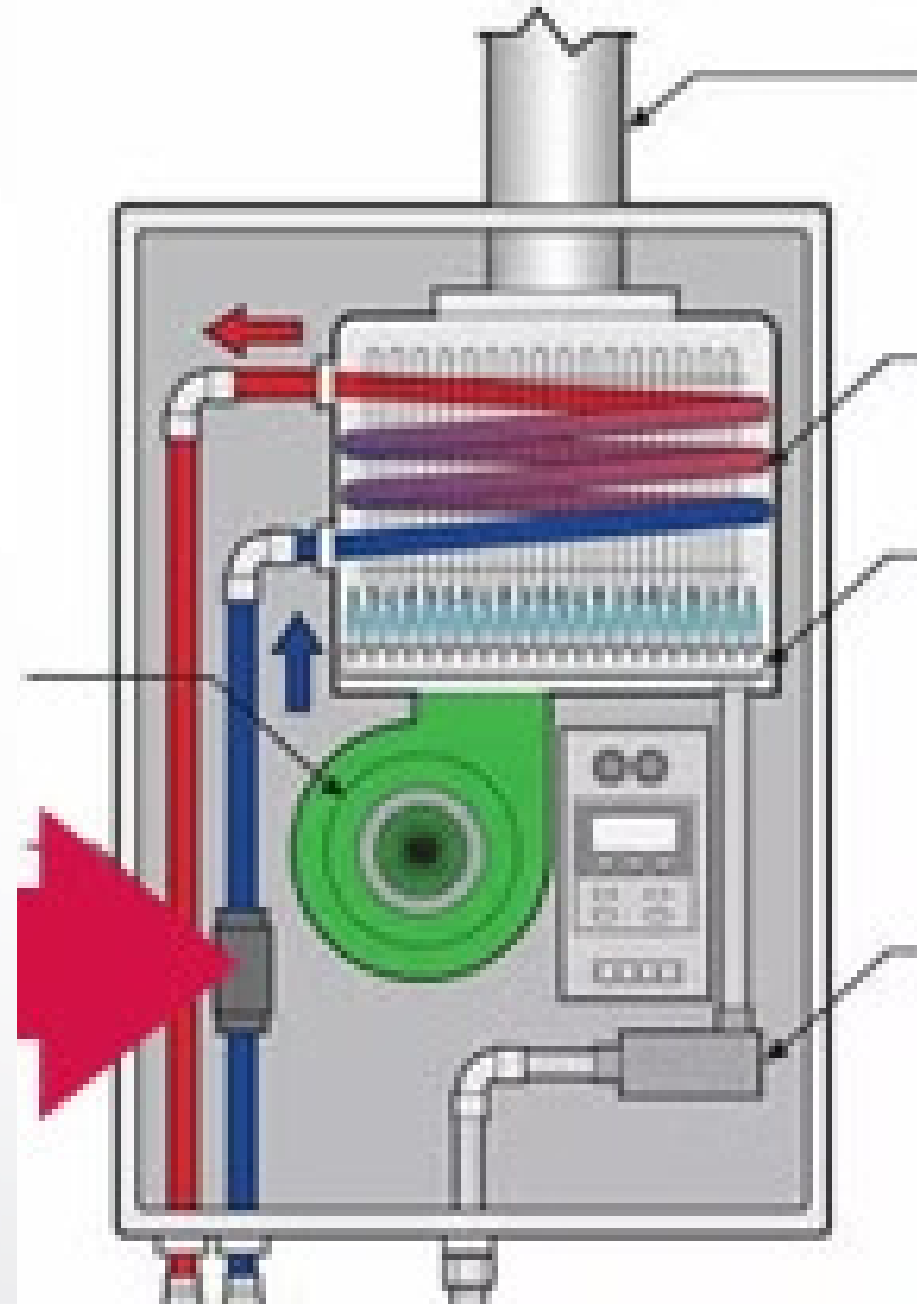


## Even Heating

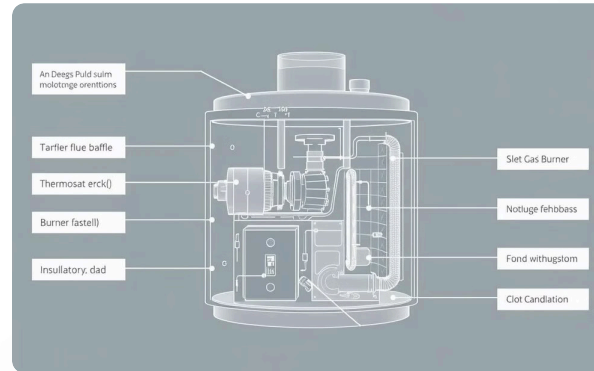
These elements are responsible for heating the water in electric water heaters and are typically located at different levels within the tank to ensure even heating.

# Flow Sensor

The flow sensor is a component inside of tankless water heaters attached to the cold-water inlet pipe. Its primary function is to turn on the tankless water heater system when it detects cold water flowing into the system, ensuring that hot water is produced on demand.

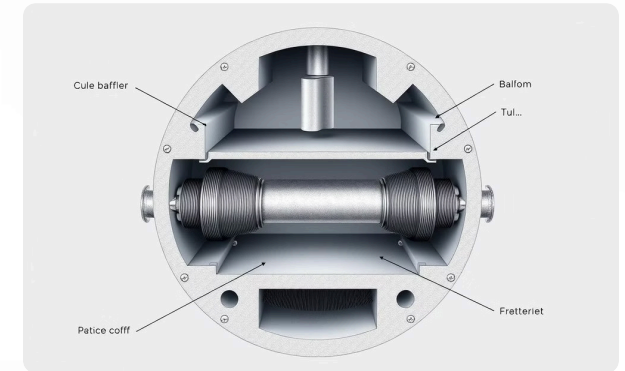


# Flue Baffle



## Flue Baffle Function

The flue baffle is a tube that runs from the burner to the vent of gas-fired tank-type water heaters. Its primary function is to help remove exhaust and by-products that result from the combustion process, improving the efficiency and safety of the water heater.

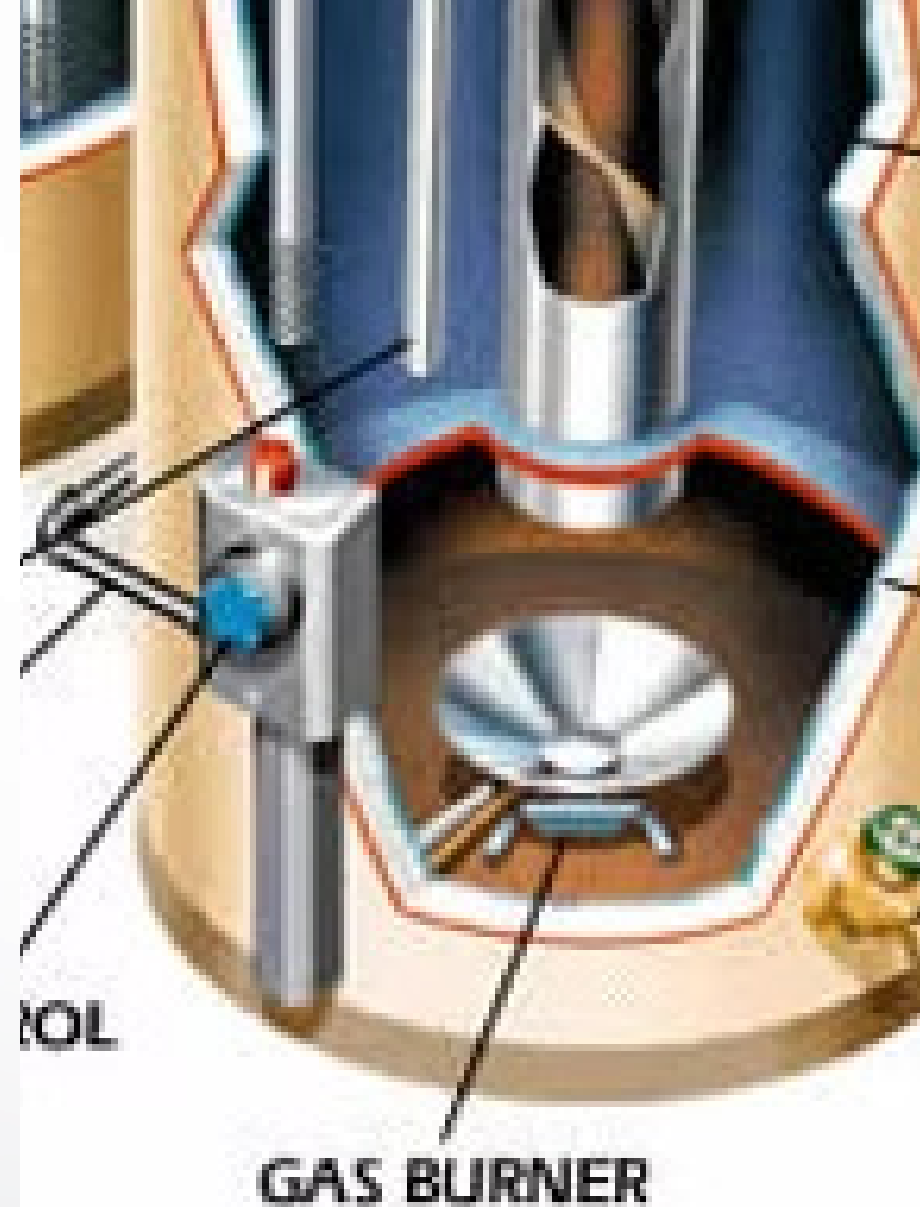


## Construction

Flue baffles are typically made of metal and are designed to withstand high temperatures.

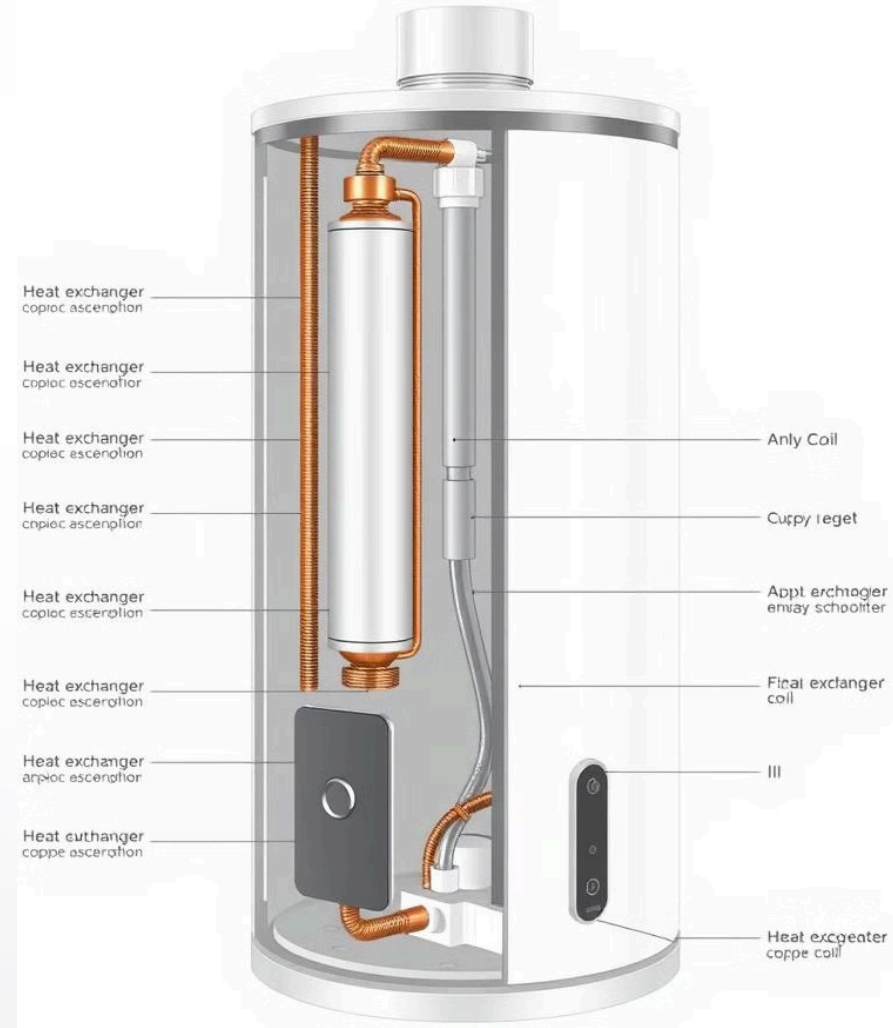
# Gas Control Valve

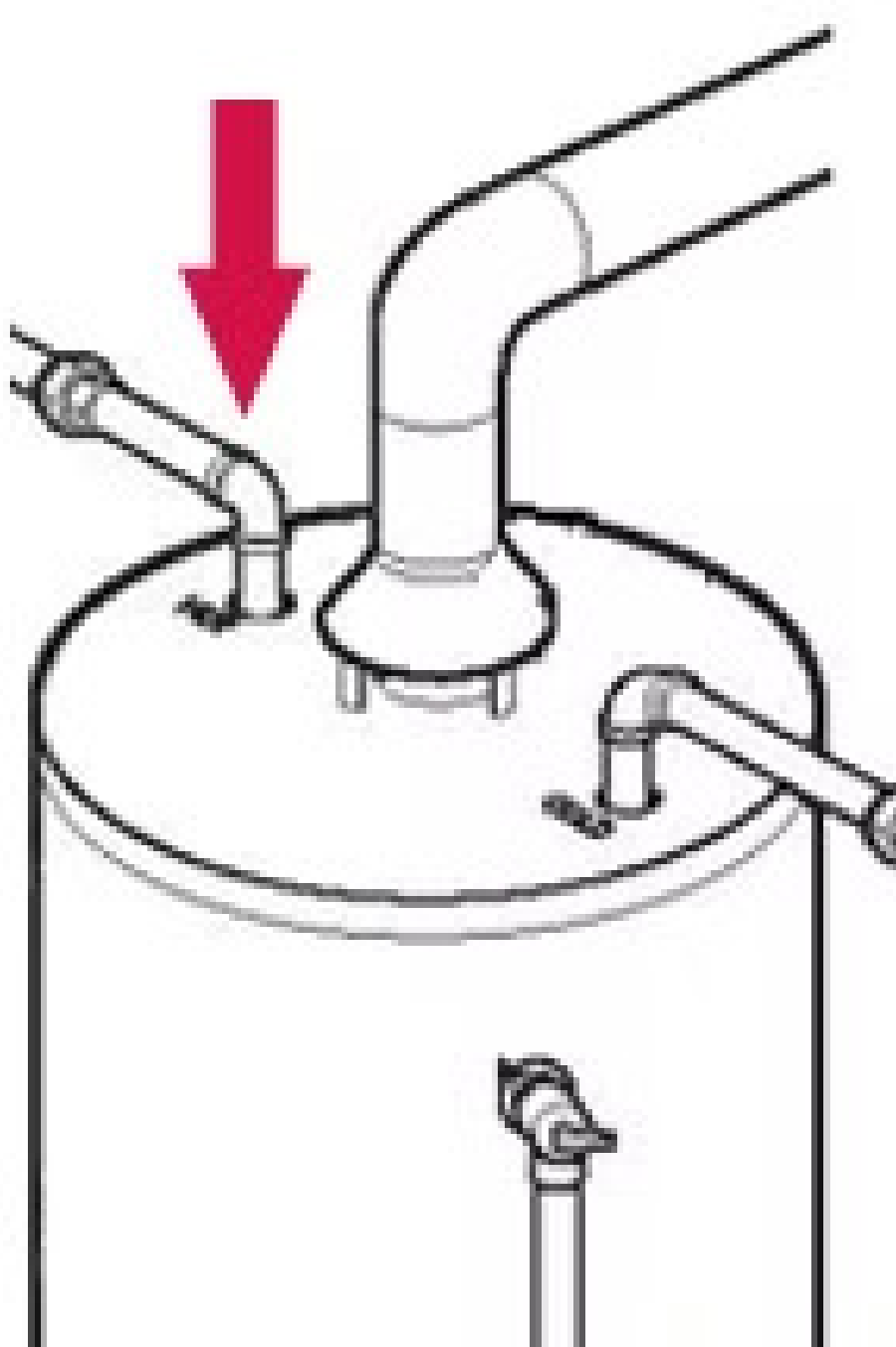
The gas control valve is a valve attached to the gas pipe that turns the flow of gas on or off. This component is crucial for controlling the operation of gas-fired water heaters and ensuring safe gas supply to the burner.



# Heat Exchanger

The heat exchanger is a component of tankless water heaters that heats up cold water by means of a heating coil. It is responsible for transferring heat from the burner to the water passing through the system, allowing for on-demand hot water production.





## Hot-Water Outlet Pipe

The hot-water outlet pipe is the pipe that carries hot water out of the water heater and into the home's hot water pipes. This component is essential for distributing heated water to various fixtures and appliances throughout the home.



# Hot Water Storage Tank



## Cylindrical Storage

The hot water storage tank is a cylindrical tank, typically made of steel and lined with glass, that stores hot water in tank-type water heaters.

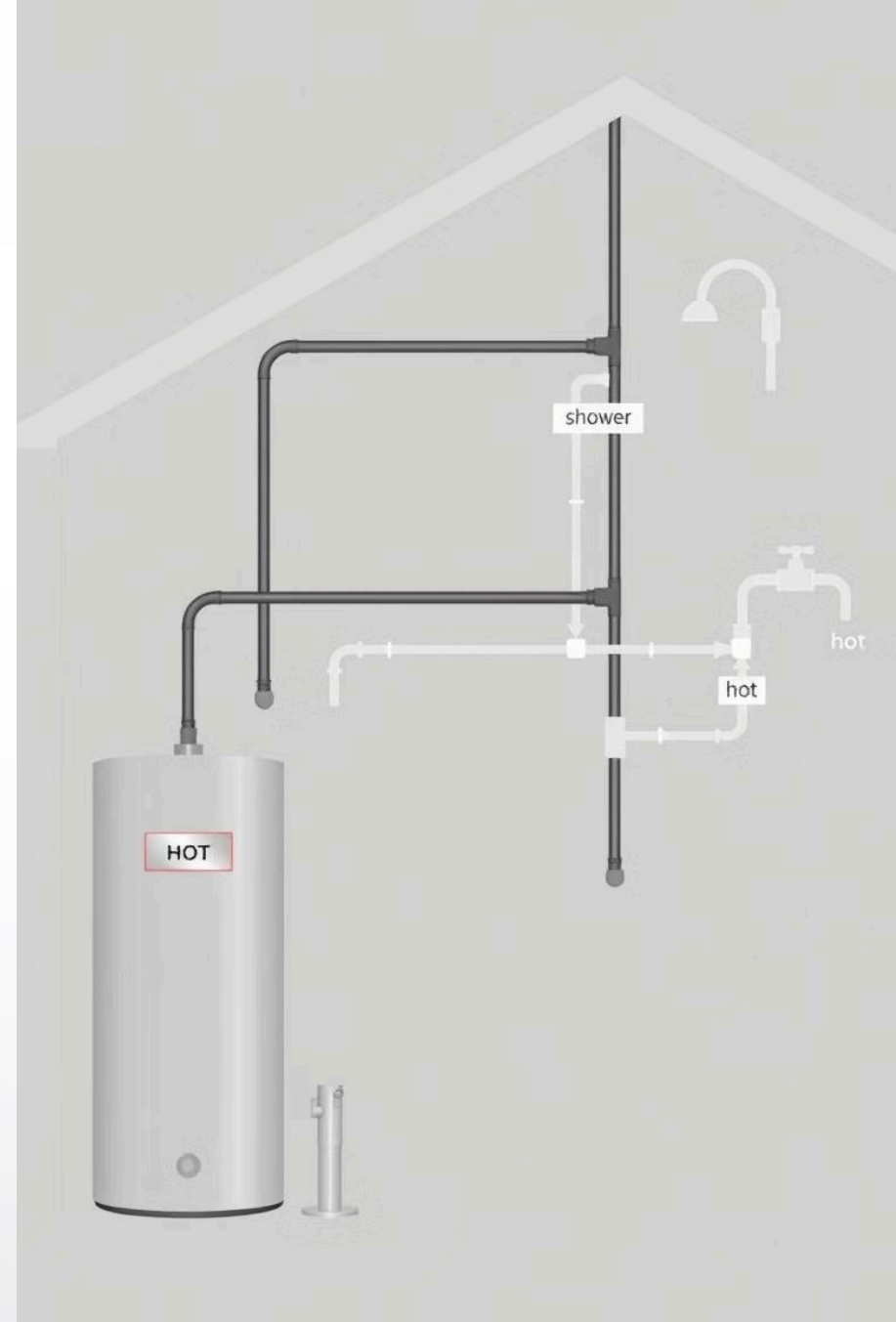


## Ready Supply

This component allows for a ready supply of hot water to be available for use in the home.

# Lag Time

Lag time refers to the time it takes for hot water to reach the appropriate appliance or fixture. This is an important consideration in water heater system design, especially for large homes where fixtures may be located far from the water heater.



# Pilot Light

The pilot light is a component of gas-fired water heaters that ignites the burner. It maintains a small flame that can quickly light the main burner when hot water is needed, ensuring efficient operation of the water heater.



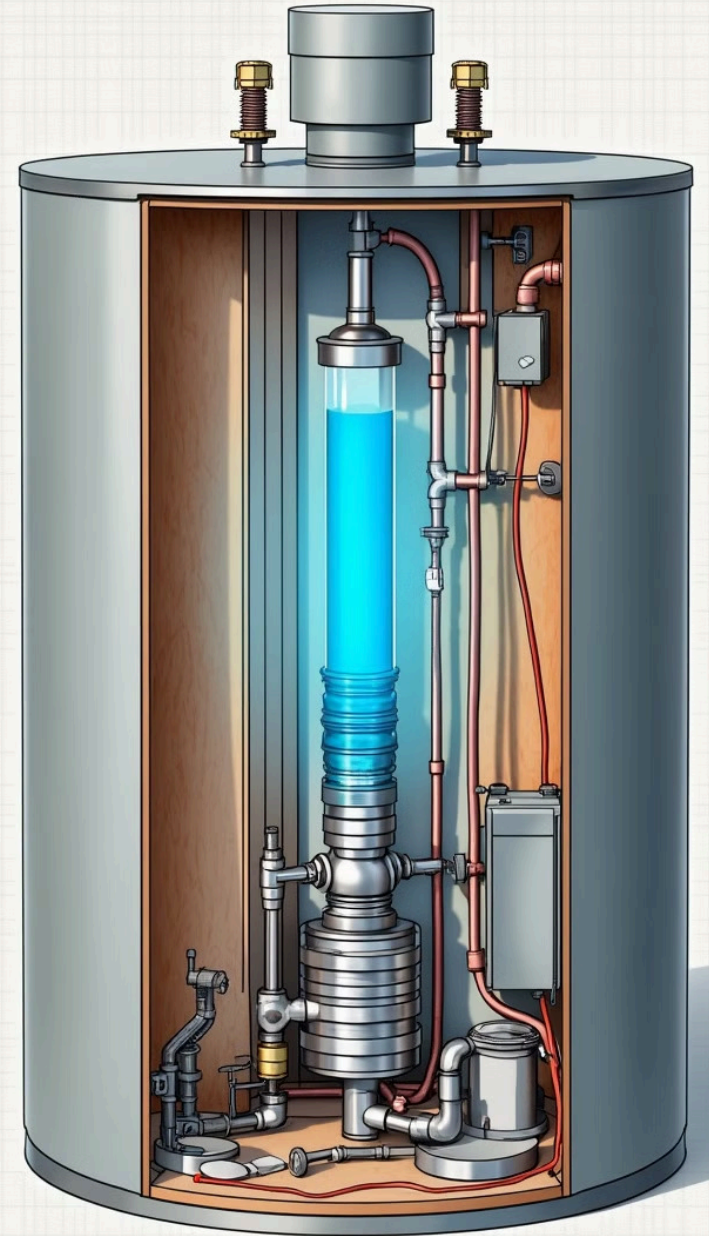


# Point-of-Use Tankless Water Heaters

Point-of-use tankless water heaters are small units that attach directly to a fixture or appliance. They are often used in large homes where lag time is an issue, or for appliances or fixtures that aren't attached to the home's main hot water system. These units provide instant hot water at the point of use, improving efficiency and reducing water waste.

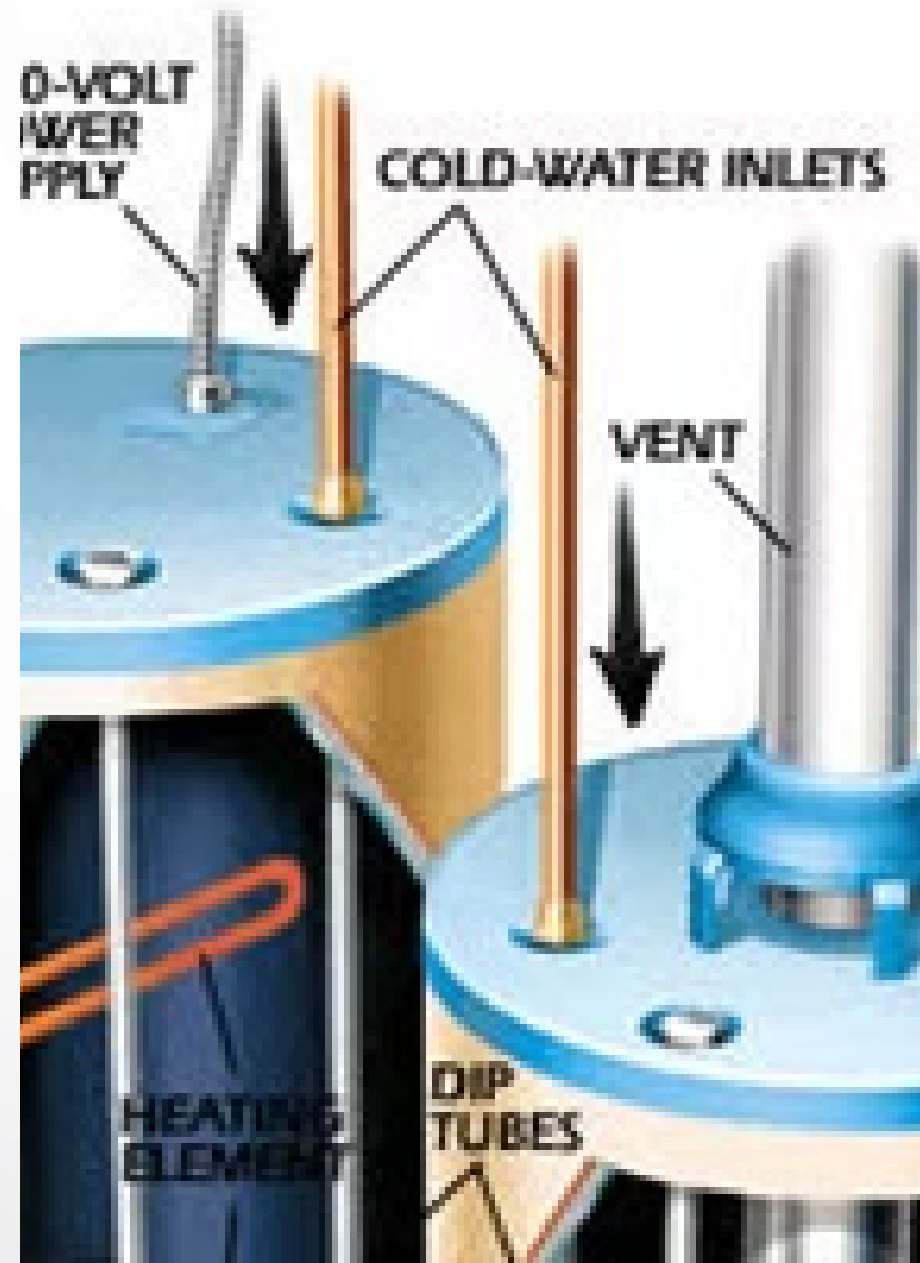
# Sacrificial Anode Rod

The sacrificial anode rod is a magnesium rod found in tank-type water heaters that corrodes in place of the tank or other internal components. This rod plays a crucial role in extending the life of the water heater by preventing corrosion of the tank itself. Anode rods should be inspected about once a year and replaced once they have fully corroded.



# Supply and Delivery Pipes

Supply and delivery pipes is a general term for both the cold-water inlet pipe and hot-water outlet pipe. These pipes are essential for the functioning of any water heater system, bringing cold water in and distributing hot water out to various fixtures and appliances in the home.



# Tank Water Heater

A tank water heater is a type of water heater that includes a hot water storage tank. These systems heat and store a large volume of water, keeping it ready for use. Tank water heaters are common in many homes and can be powered by gas, electricity, or other fuel sources.





# Tankless Water Heater

A tankless water heater, also known as an instantaneous or on-demand water heater, is a type of water heater that does not include a hot water storage tank. Instead, tankless water heaters heat water as it passes through a heat exchanger. High-end gas-fired tankless water heaters have minimal lag time, which is why they are often referred to as 'on-demand' or 'instantaneous'.



# Thermostatic Mixing Valve

A thermostatic mixing valve is a safety device that prevents scalding by adding cold water to a stream of hot water. This valve helps maintain a safe and consistent water temperature at fixtures and appliances, reducing the risk of burns from excessively hot water.



# T&P Deposit Pipe

The T&P deposit pipe is a pipe that releases water when the pressure or temperature inside of a hot water storage tank is too high. These pipes typically run alongside the tank and end about six inches above the floor of the home, providing a safe outlet for excess pressure or temperature.

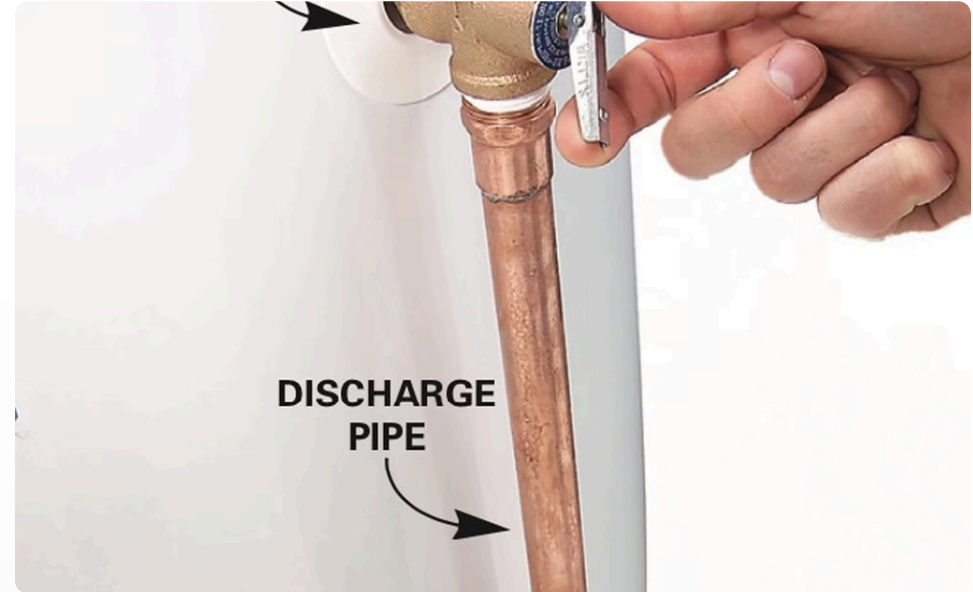


# T&P Valve



## T&P Valve

The T&P valve, or Temperature and Pressure Relief valve, is a safety valve located at the top of hot water storage tanks.

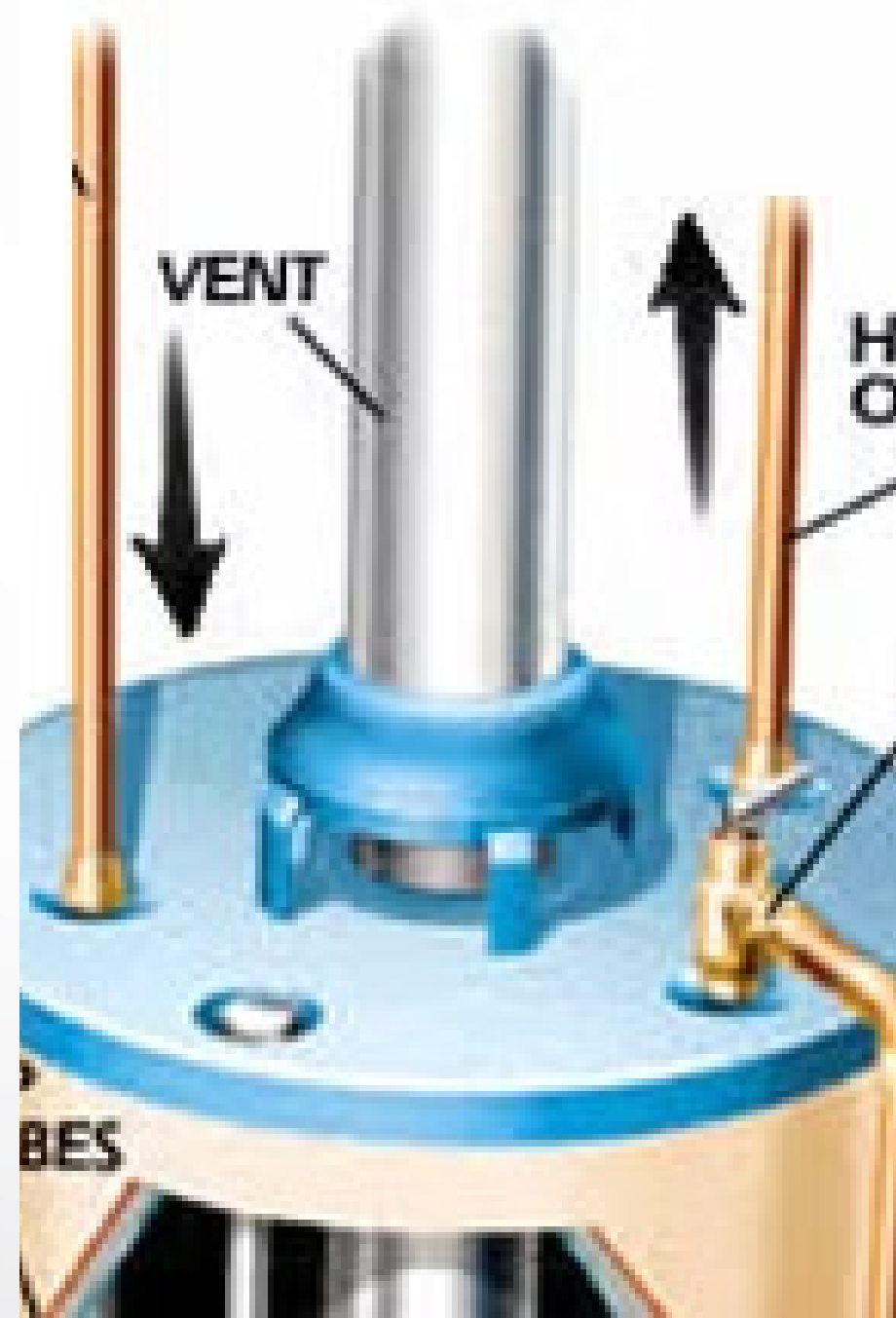


## Safety Mechanism

This valve monitors pressure and temperature in the tank and will expel water through the T&P discharge pipe when the pressure or temperature within the tank is too high, preventing potentially dangerous situations.

# Water Heater Exhaust Vent

The water heater exhaust vent is a vent found coming out of gas-fired water heaters that carry combustion by-products outside of the home. This component is crucial for maintaining air quality and safety in homes with gas-fired water heaters.



# Water Heater Thermostat

The water heater thermostat is a device that sets and regulates temperature. Its function varies depending on the type of water heater:

- In tankless water heaters, the thermostat regulates the temperature of the water leaving the tank
- In tank-type water heaters, it regulates the temperature of water within the tank



# Water Heater Safety Features

## T&P Valve

The Temperature and Pressure Relief valve is a crucial safety feature that releases excess pressure or temperature from the tank.

## Thermostatic Mixing Valve

This valve prevents scalding by mixing cold water with hot water to maintain a safe temperature.

## Draft Hood

The draft hood prevents combustion exhaust from entering the home, ensuring safe operation of gas-fired water heaters.

## Flow Sensor

In tankless water heaters, the flow sensor ensures the system only operates when water is flowing, preventing overheating.



# Water Heater Maintenance Tips

## Annual Inspection

Inspect the anode rod, T&P valve, and other components annually to ensure proper functioning.

1

2

## Flush the Tank

Use the drain cock to flush the tank periodically, removing sediment and improving efficiency.

3

## Check for Leaks

Regularly inspect the area around your water heater for signs of leaks or corrosion.

4

## Test Safety Features

Test the T&P valve and other safety features according to manufacturer recommendations.

# Need Help With Your Water Heater?

Hyde Park Plumbing provides comprehensive water heater services for Boise and the surrounding areas. Contact us for professional repairs, installations, maintenance, and more. Our experienced plumbers are available 24/7 to address any water heater issues you may face.

Whether you need a tankless water heater installed or a traditional tank water heater repaired, we are your go-to experts. We offer a wide range of services for both residential and commercial properties, ensuring your hot water needs are met with efficiency and reliability.

Contact us today

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