



## ASK THE INSPECTOR<sup>®</sup> WATER HEATERS



### WHAT ARE THE AVAILABLE TYPES OF WATER HEATERS AND HOW DO THEY WORK?

#### CONVENTIONAL TANK-STYLE WATER HEATERS

Fueled by electricity, oil, natural gas, propane or wood.

- ▶ Tank-style water heaters not only heat the water, they also store the water once it has been heated. This is why they are so large. The capacity of a tank usually ranges from 40 to 60 gallons.
- ▶ Non-electric, fuel-fired water heaters are equipped with a burner situated at the bottom of the tank. This allows the exhaust gases to travel through either the middle of the tank or around the outside of the tank to the exterior of the home.
- ▶ Tank-style electric water heaters have heating elements in the water that heat the water directly. Since there is no heat lost through the generation and venting of exhaust gases, tank-style electric water heaters are 80-90% efficient.
- ▶ Heat pump water heaters use electricity to move heat from one place to another instead of generating heat directly. Therefore, they can be two to three times more energy efficient than conventional electric resistance water heaters.

#### TANKLESS WATER HEATERS:

Fueled by electricity, oil, natural gas, propane or wood. Tankless water heaters are relatively small and are usually wall-mounted units that take up little space. They are, however, significantly more expensive to purchase and install than traditional tank-style units

- ▶ When a hot water tap is turned on, the water heater senses the demand and ignites the burner or energizes the element. A larger element or burner will supply more hot water, which is convenient if two or more appliances require hot water simultaneously.
- ▶ The energy savings from eliminating the off-cycle costs (i.e. keeping an entire tank of water heated overnight) can be as much as 10-15%.

#### SOLAR WATER HEATERS:

Fueled by the sun's energy but are typically used to supplement standard fuel-fired or electric water heaters. Solar water heaters are characterized either as open loop or closed loop systems.

- ▶ An open-loop system circulates household (potable) water through the solar panel, where the water is heated directly by the sun.
- ▶ A closed-loop system uses a heat-transfer fluid to collect heat from the sun and a heat exchanger to transfer the heat from the heat-transfer fluid to household water.

#### DID YOU KNOW?

New technologies have increased the efficiency of gas and propane-fired, tank-style water heaters significantly. For example, condensing or high efficient units pre-heat the incoming cold water using the heat from the exhaust gases generated from the burning of the fuel. This extracts so much heat that the exhaust gases condense and turn to liquid.



#### WHAT DOES THE INSPECTION COVER?

- Type, size and age of water heater
- Proper operation of unit and components
- Check for leaks, improper venting and proper TPR installation
- Water temperature and distribution
- Placement of unit and safety components
- External support components

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