



### **What's the difference between instantaneous, semi-instantaneous, and storage tank type water heaters?**

Instantaneous water heaters are used for a steady continuous supply of hot water. The water is heated as it flows through the tubes. The ratio of hot water volume to heating medium volume is small. Generally a mixing valve is used to maintain the hot water supply at a uniform temperature.

Semi-instantaneous heaters have a limited storage and a heating element(s) that can respond quickly to demand. They consist of a heating element and a control assembly to maintain close control of the leaving water temperature.

Storage water heaters are designed for conditions where hot water requirements are not constant. The amount of storage required depends on the type of load and the recovery capacity of the heater.

### **Is one type better than another?**

Each type has its application. A storage heater is useful where a large volume of heated water is held for a peak load. Instantaneous is useful where there is a steady load. Instantaneous heaters have a small footprint, taking up little floor space. Semi-instantaneous heaters can maintain a very close temperature control and can meet momentary surges of demand. While having some volume of water in them, their footprint is small also.

### **How does an Aerco semi-instantaneous heater work?**

As a demand is sensed, steam enters the heater through the control valve and migrates up through the helically wound coils. As the steam turns to condensate it returns through the condensate riser and flows into the lowest, sub-cooling coil. Cold water enters the bottom of the heater, flowing over the sub-cooling coil as it rises to the top head of the heater flowing over all the coils. The cold water takes advantage of the latent heat in the condensate. The control valve operates with a feed forward system, sensing both the water demand and the set point of the heater.

### **What's the benefit of helically wound coils over a U tube coil in the heater?**

Aerco's helically wound coils flex as they heat and cool thereby self de-scaling. They flex rather than pull against the tube sheet giving a longer life to the unit. The coils are warranted for 10 years.

### **Do I need a tank with my Aerco water heater?**

An Aerco heater can handle continuous flow up to 125 GPM (with side flanges) and intermittent flows up to 250 GPM. However for situations, such as a laundry, when there is a sudden surge in the flow rate, causing the control valve to open quickly to let steam into the heater and then close quickly as machines fill, a tank is recommended to buffer the heater.



**What are the materials of construction of an Aerco semi-instantaneous water heater?**

The shell is carbon shell with a copper line. The helically wound coils are standardly .049" thick copper (with .065" or CuNi coils available). The heads are cast bronze and the risers red brass.

**Is the heater packaged with all I need to operate it?**

The Aerco indirect fired heater comes with a control valve (with options of electronic, pneumatic or self contained), dual over temperature limit system and connections for out water outlet and cold water inlet. It requires 120 volt power. There is a condensate opening which is piped (gravity flow) to a condensate receiver. A steam trap on the condensate line as it exits is not required.