Firestorm®
Direct-Contact Water Heaters

• 99 percent efficient
• Water temperatures up to 185°F
• Flow rates up to 1,200 gpm

Model HHW-170 Firestorm heater
with a Power Flame burner rated
at 17 million Btu/hour
FIRESTORM® heaters are designed to heat water for a wide variety of business operations. They provide a constant supply of hot water for clean-up operations. And they provide heated water used in the manufacturing process of many products. Certain models are certified for food service and carry the NSF seal of approval. Some industries where the heater may be used are as follows:

- Food processing
- Poultry
- Bottling
- Pharmaceutical
- Ready-mix concrete
- Commercial laundries
- Car and truck washes
- Aquaculture
- Carpet and textile
- Oil, gas & chemical
- Railroads
- Hotels

Firestorm heaters have extremely high thermal efficiency: up to 99 percent. They raise the temperature of water up to 185 degrees F at flow rates from 13 to 1,200 gpm depending on heater size. Stack temperatures are close to incoming water temperatures.

The benefits of hot water on-demand
With the Firestorm heater, water is heated on-demand. Unlike using a heated water tank, there is no need to heat, store and maintain the temperature of thousands of gallons of water.

Since water is being heated and used on-demand, the burner is fired to heat only the amount of water used, as it is used. The result is fast response: you have hot water when you need it, without paying to heat water you don’t use.

Design
The heater uses a fully-modulating, forced-draft burner that fires into the side of the heater shell. Cold water is sprayed into the top of the shell and migrates downward through a bed of stainless steel rings, called packing. Packing temporarily slows the flow of water and provides surface area for heat transfer. As water migrates downward through the packing, hot burner gasses flow upward through the falling water. The water is heated by direct contact with the hot burner gasses. Heated water flows to the bottom of the shell where it accumulates momentarily.

The hot water is pumped from the collection area at the bottom of the shell to the location where it is used. Structural components, piping and internal parts are made from stainless steel. Controls are automated using a PLC (Programmable Logic Controller).

We also offer a low-profile version of the Firestorm heater. It has a horizontal tank for surge water and can operate on diesel fuel. (See Product Sheet 8-10-240.)

Burners
Burners on Firestorm heaters operate on natural gas and propane. Low NOx burners are also available.

Safety features
Firestorm heaters provide safe, unattended operation. Burner controls include a Fireye Flame Monitor to provide microprocessor-based burner management. This ensures that all safety limits are met before the burner is fired.

Low-level switches prevent the burner from firing unless water is flowing through the heater. This prevents the walls of the heater from being damaged by overheating. High-level switches shut off the burner and incoming water.

NSF certification
Many models of the Firestorm heater are certified for food service in accordance with NSF/ANSI Standard 5. They are gas-fired and all parts that contact the water they heat are lead free. Their model numbers include the letter F. And the NSF Certification mark appears on the Heatec serial number plate on the heater.

Control panel is UL certified and meets NEMA 4 requirements for protection against windblown dust and rain, splashing water and hose-directed water. It includes a PLC (programmable logic controller) for automated control of the heater. It also includes a Fireye Flame Monitor that provides microprocessor-based burner management.
Fully-Modulating Low NOx Burner (optional)

Inlet Water train

Water migrates downward through stainless-steel packing

Hot burner gases flow upward through falling water

Water jackets prevent overheating of structural walls

Full-Coverage Spray Nozzle

Low temperature Exhaust gases

Firestorm Direct-Contact Water Heater
Firestorm heater models up to 8 million Btu/hour leave the factory fully assembled, piped, wired and tested. No assembly required! Heatec Service technicians are also available for startup.

**Service & Support**

Heatec engineers are available for consultation on your project. Moreover, our factory-trained service technicians can start up the heater for you. We back our products with round-the-clock support from our in-house parts and service departments. And, we use off-the-shelf burner parts and other components that should be readily available from your local supplier.

The heater model most suited for your application depends on water flow rate and temperature rise needed. From the table above, pick the temperature rise approximately the same as the temperature rise you need. In the column below the temperature rise you picked, find a flow rate equal to or greater than the flow rate you need. The heater model most suitable for that temperature rise is shown on the same line. The cfh (cubic feet per hour) values shown for natural gas assume an HHV (high heating value) of 1030 Btu/cubic foot. The gph (gallons per hour) values shown for propane assume an HHV of 91,000 Btu/gallon.

*When the heater must be certified for food service, add the letter F to its model designation, for example HHW-60F.

<table>
<thead>
<tr>
<th>Model*</th>
<th>BTU/hour (million)</th>
<th>Water Flow Rate (gpm)</th>
<th>Approx. Dimensions (Length, Width, Height: inches)</th>
<th>Burner Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Temperature Rise (degrees F)</td>
<td>L</td>
<td>W</td>
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<tr>
<td></td>
<td></td>
<td>60</td>
<td>70</td>
<td>80</td>
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<tr>
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</table>

The heater model most suited for your application depends on water flow rate and temperature rise needed. From the table above, pick the temperature rise approximately the same as the temperature rise you need. In the column below the temperature rise you picked, find a flow rate equal to or greater than the flow rate you need. The heater model most suitable for that temperature rise is shown on the same line. The cfh (cubic feet per hour) values shown for natural gas assume an HHV (high heating value) of 1030 Btu/cubic foot. The gph (gallons per hour) values shown for propane assume an HHV of 91,000 Btu/gallon.

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