

# 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**

**HEATEC®**



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

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 Fireeye Flame Monitor that provides microprocessor-based burner management.



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.

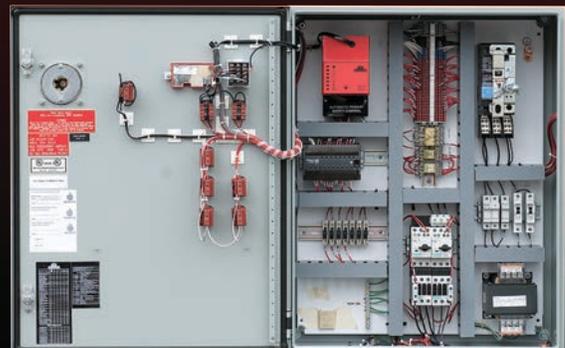
## Safety features

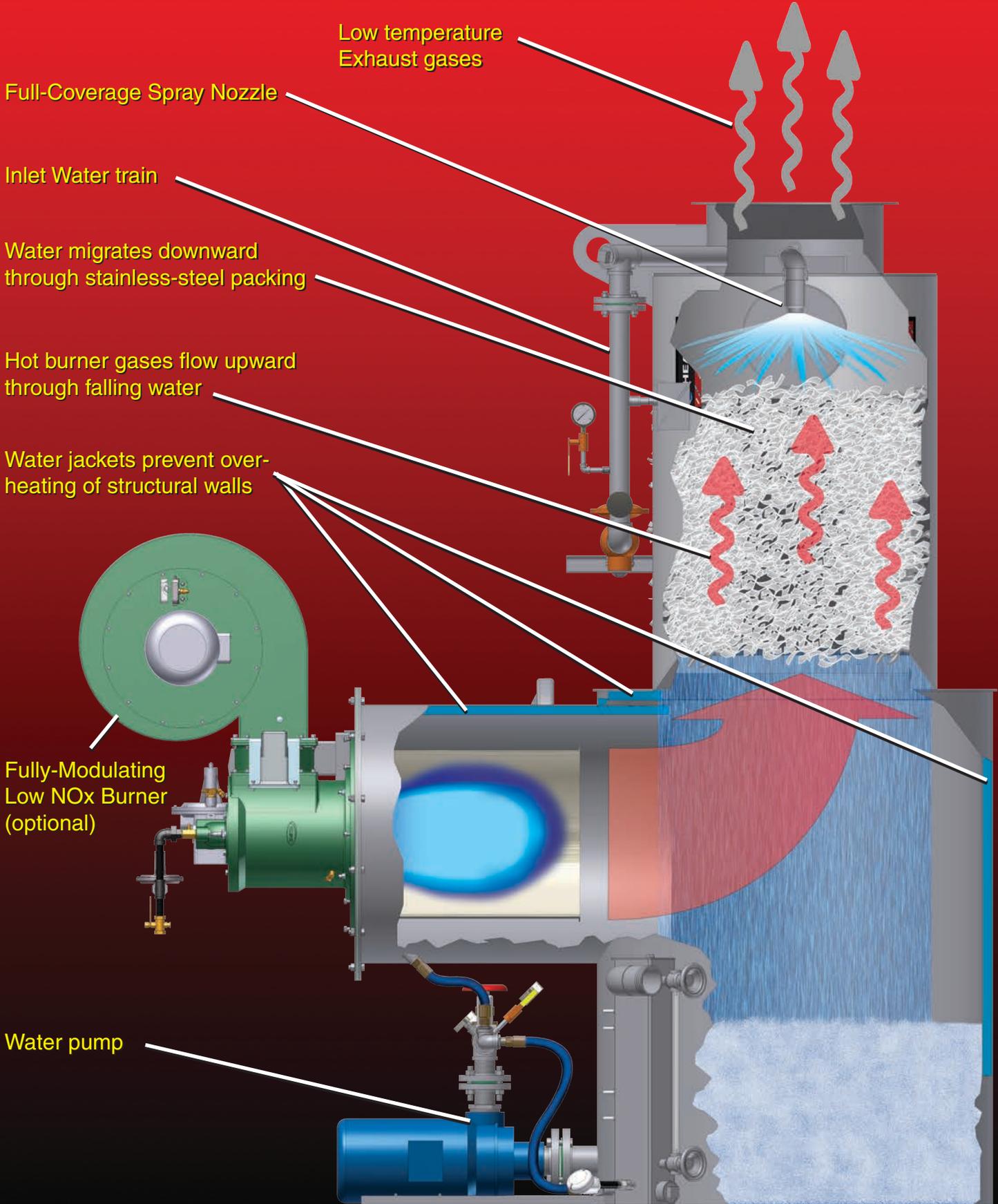
Firestorm heaters provide safe, unattended operation. Burner controls include a Fireeye Flame Monitor to provide microprocessor-based burner management. This ensures that all safety limits are met before the burner is fired.

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.





**Firestorm Direct-Contact Water Heater**

## Characteristics of Firestorm heaters

Model*	BTU/ hour (million)	Water Flow Rate (gpm)							Approx. Dimensions (Length, Width, Height: inches)			Burner Requirements	
		Temperature Rise (degrees F)							L	W	H	Natural Gas (cfh)	Combustion Air (cfm)
		60	70	80	90	100	110	120					
HHW-07	0.75	25	21	19	17	15	14	13	72	36	111	750	163
HHW-10	1	33	29	25	22	20	18	17	79	52	117	1000	217
HHW-16	1.6	53	46	40	36	32	29	27	88	54	117	1600	347
HHW-23	2.3	77	66	58	51	46	42	38	96	54	117	2300	498
HHW-40	4	133	114	100	89	80	73	67	115	54	117	4000	867
HHW-60	6	200	171	150	133	120	109	100	136	61	128	6000	1300
HHW-80	8	267	229	200	178	160	145	133	158	78	144	8000	1733
HHW-110	11	367	314	275	244	220	200	183	180	84	152	11000	2383
HHW-140	14	467	400	350	311	280	255	233	202	96	160	14000	3033
HHW-170	17	567	486	425	378	340	309	283	225	104	168	17000	3683
HHW-200	20	666	571	500	444	400	364	333	243	108	176	20000	4333
HHW-240	24	800	685	600	533	480	436	400	261	114	184	24000	5200
HHW-280	28	933	800	700	622	560	509	466	279	120	192	28000	6067
HHW-360	36	1200	1028	900	800	720	654	600	297	126	200	36000	7800

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.

## 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.



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.



This Firestorm heater has an Eclipse low NOx burner with an output of 4 million Btu/hour. Hatches on the heater's upper section provide full access to the spray nozzle and packing area for inspection & maintenance. Removing the burner and end plate allows easy access to the inside of the lower tower.

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**HEATEC, INC.** an Astec Industries Company

5200 WILSON RD • CHATTANOOGA, TN 37410 USA 800.235.5200 • FAX 423.821.7673 • heatec.com

