

HEATEC® HC & HCS SERIES HOT OIL HEATERS



HOT OIL HEATERS

ASTECS Heatec HC & HCS hot oil (thermal fluid) heaters combine efficiency, reliability and performance in a simple and easy to maintain package. The heaters are built around a helical coil which is the most efficient and reliable design for fired industrial heaters available today. Safeguards and controls are in place to assure safe operation. They are extremely versatile and can be used for a number of different applications. They come in a range of standard outputs and are fully customizable.





HEATEC HC & HCS HOT OIL HEATERS

High Efficiency Reduces Costs

A hallmark of our helical coil heater is high thermal efficiency. Thermal efficiencies of our standard heaters range up to 85 percent LHV, depending upon fluid outlet temperature and fuel.

Thermal efficiency is the total amount of heat produced by the burner versus the portion actually transferred to thermal fluid flowing through the coil. Thus, in our heaters, up to 85 percent of the total heat is transferred to the thermal fluid. Increasing efficiency reduces fuel usage.



Achieving Super-Efficiency

Adding a STACKPACK™ heat exchanger (economizer) boosts thermal efficiency another 5 percent. It makes our current heater super-efficient. That extra percentage reduces monthly fuel usage by 261 gallons of No. 2 fuel oil or 345 therms of natural gas. The Stackpack heat exchanger usually pays for itself in a year or less.

Burner Controls

Fireye™ burner management controls known as BurnerLogix™ provide proper and safe operation of the burner. They include a display, burner control, programmer, annunciator and flame scanner.

The burner control uses a microprocessor for its management functions. The processor provides the proper burner sequencing, ignition and flame monitoring protection.

The controls provide important messages about the operating status of the heater. If there is an alarm condition, a message will appear on the display. The message identifies the cause of the alarm, including which safety device in the limit circuit may have caused the shutdown.

NOTE: Fireye and BurnerLogix are trademarks of Fireye, Inc.

Controls

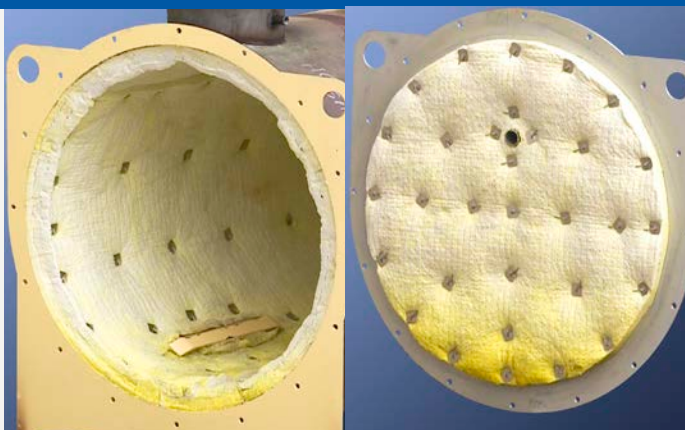
Heater controls automatically maintain the operating temperature set by the operator. Accuracy is within a half percent of set temperature. The temperature of thermal fluid at the heater's outlet can be maintained up to 450°F (depending on variables).

Numerous safety features ensure heater operation is always within prescribed limits. Heaters shut down automatically if an abnormal operating condition occurs.

Switches and sensors in a limit circuit ensure normal operation. They monitor burner flame, thermal fluid temperature, exhaust gas temperature, flow of thermal fluid, and combustion air pressure.

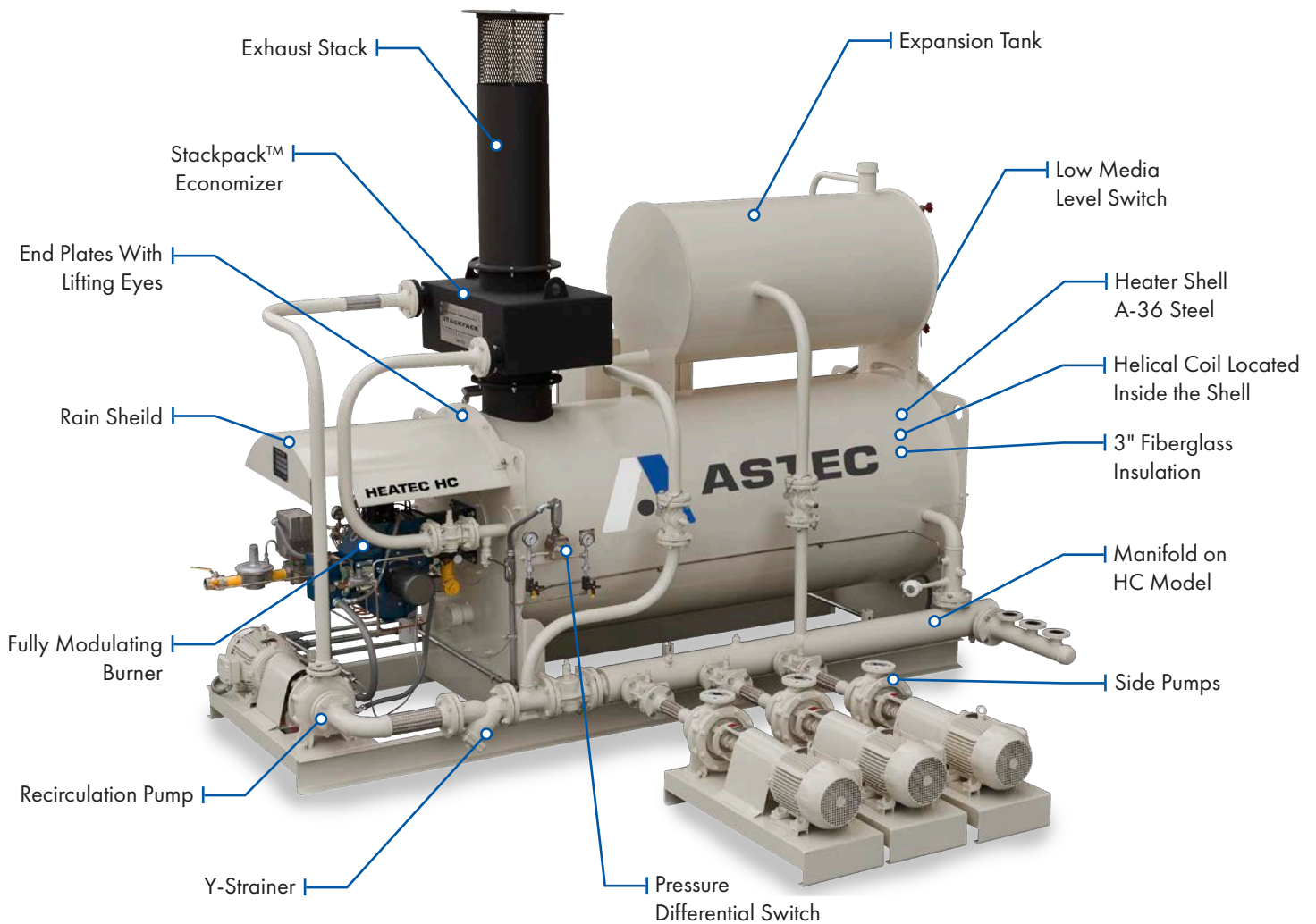
Control Panel

Main controls are in a UL approved NEMA-4 panel, which protects against windblown dust and rain, splashing water and hose-directed water. Wiring workmanship is meticulous and meets strict standards. All wires and terminals are labeled for easy identification of circuits. A laminated circuit diagram is furnished.



Insulation

The shell of our heater is fully insulated with 3 inches of ceramic fiberglass insulation. The end plates are also insulated. All insulation is treated to retard erosion.



Burner Modulation

The heater has a fully modulating burner with appropriate turndown ratios. Modulation allows its firing rate to closely match the heat demand. This conserves fuel, reduces temperature overshooting and eliminates constant on-off recycling.

Helical Coils

Helical coils in our heaters set us apart from others that produce helical coil heaters for the HMA industry. We are the only heater manufacturer that builds all coils to ASME code. Certification is optional.

Coils in HCS heaters have a three year warranty. Coils in HC heaters have a five year warranty.



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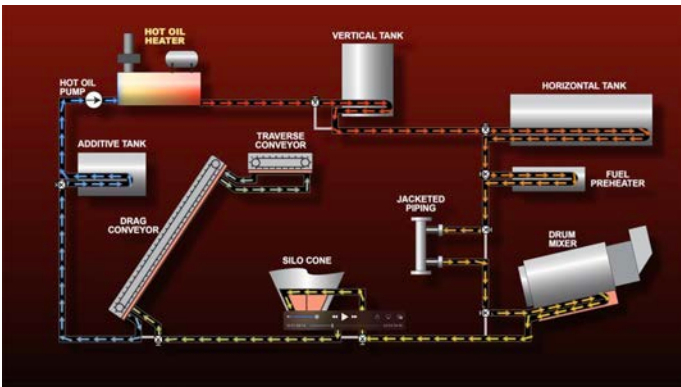


HCS Single-Circuit Heater Model

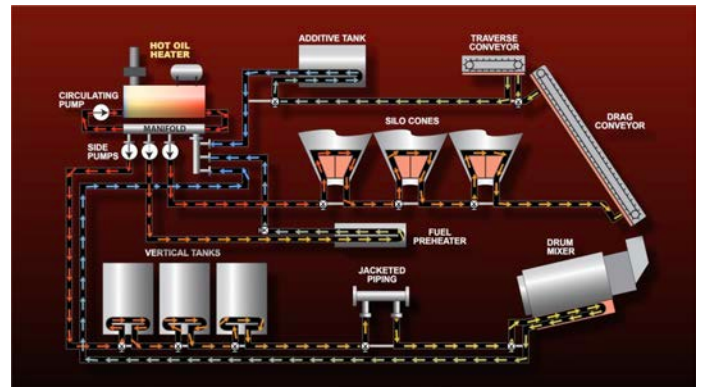
There are two basic configurations to choose from. The HCS model can only be used in a single circuit. The single circulation pump circulates hot oil (thermal fluid) through the heater and to each component in series to each other. This works well when there are not a lot of components in the circuit. The more components you have in series to each other creates more resistance to flow. This dramatically slows down how fast the hot oil flows through the components and returns to the heater, which increases the time needed to heat the components. Lack of flow can also cause the heater to shut down to protect the helical coil from being damaged. HCS heater models can be upgraded to HC heater models if you add more components to your system.

HC Multi-Circuit Heater Model

The only difference between the two heater models is the HC model has a manifold and side pumps, the HCS model does not. The manifold and side pumps enable the heater to operate with multiple hot oil (thermal fluid) circuits, up to four circuits. This model is ideal when there are numerous components to heat in the system. The circulation pump only circulates hot oil through the heater coil. This assures optimal flow through the coil of the heater regardless of flow through the other components in the system. This keeps the coil from overheating and being damaged, extending the life of the coil. The manifold has outlets, returns, and side pumps. Each outlet acts as an independent source for each circuit with its own side pump. This assures flow and fast heating to each component in the circuit because it has fewer components.



Hot oil flow through a single circuit.



Hot oil flow through multiple circuits.

Hot Oil Heater Specifications

MODEL	MAX OUTPUT	FUEL USAGE		RECIRCULATION PUMP		EXPANSION TANK	APPROXIMATE SIZE			NET WEIGHT	
	BTU/HOUR	NO. 2 OIL GALLONS	NATURAL GAS CUBIC FT/HR	HP	GPM	GALLONS	LENGTH	WIDTH	HEIGHT	POUNDS	
SINGLE CIRCUIT	HCS-70	700,000	6	910	10	100	100	10'-5"	5'-7"	8'-10"	3,700
	HCS-100	1,200,000	11	1,560	10	100	175	12'-1"	5'-9"	9'-0"	5,000
	HCS-175	2,000,000	18	2,600	15	150	280	14'-5"	6'-3"	9'-7"	6,500
	HCS-250	3,000,000	27	3,900	15	150	280	15'-9"	7'-4"	10'-6"	9,300
	HCS-350	4,000,000	36	5,200	15	200	400	18'-1"	7'-4"	11'-5"	10,700
MULTI-CIRCUIT	HC-120	1,200,000	11	1,560	10	100	175	12'-1"	5'-11"	9'-0"	5,100
	HC-200	2,000,000	18	2,600	15	150	280	14'-5"	6'-5"	9'-7"	6,600
	HC-300	3,000,000	27	3,900	15	150	280	15'-9"	7'-6"	10'-6"	9,500
	HC-400	3,000,000	36	5,200	15	200	400	18'-1"	7'-6"	11'-5"	10,900

The amount of fuel used is for a thermal efficiency of 85% and one hour of operation at maximum output. A properly sized heater normally runs for intermittent periods at lower outputs. No. 2 fuel usage is based on 132,000 Btu per gallon, its LHV (low heating value). Natural gas usage is based on 905 Btu per cubic foot, its LHV. Heights include the exhaust stack without a Stackpack heat exchanger. The Stackpack exchanger for the HCS-350 and HC-400 weighs 800 pounds and adds 2'-7" to their height. For all other models it weighs 460 pounds and adds 1'-9" to their height.

Options

Options include: Stackpack heat exchanger, seven-day time clock, sock filter, automated monitor (dialer), burners for various fuels, and steel valves. A variety of electrical power options are available.

Factory testing and startup

All HC and HCS heaters are factory-tested. We provide startup services with fees based on time at site plus travel time and expenses.

Warranty and factory support

Our heaters have a one-year limited warranty. Additionally, the coils have an extended warranty as noted earlier. Round-the-clock support is available from our in-house parts and service departments.

PARTS AND SERVICE

We back our products with 24/7 support from our in-house parts and service teams. Our engineers and sales staff are available for project consultation, and our factory-trained service technicians can install and setup your new ASTEC equipment for you.



ASTEC™

www.astecindustries.com