

HEATEC HCI SERIES INDUSTRIAL HEATERS



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HELICAL COIL HEATERS FOR INDUSTRIAL APPLICATIONS

ASTECC specializes in thermal fluid heaters, especially those with helical coils heated by fired burners. Whether known as helical coil, hot oil or HMO (heat medium oil) heaters, extremely versatile Heatec HCI heaters provide reliable service in a wide variety of industries.



PROVEN APPLICATIONS

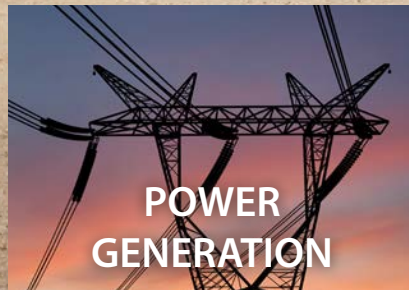




**FOOD
PROCESSING**



**BULK
STORAGE**



**POWER
GENERATION**

+
MORE

HCI HEATER DESIGN AND FEATURES

We take special care to design our heaters for optimum geometry of the combustion chamber and the flux density of the helical coil. Thus, our coil has a large heat transfer surface area to provide much lower heat flux rates than those commonly used by others. And the coil diameter and length are sized to virtually eliminate flame impingement and provide optimum flame pattern.

The diameter of pipe used for the coil is sized for an ideal fluid velocity of 5 to 13 feet per second. The coil is built to ASME code.

The heater has a steel cylindrical shell that houses a helical coil. Oversized stainless pads inside the shell support the coil leaving an annular space between

the coil and the shell. The inner surface of the shell is covered with ceramic blanket insulation that has low thermal conductivity and low heat storage.

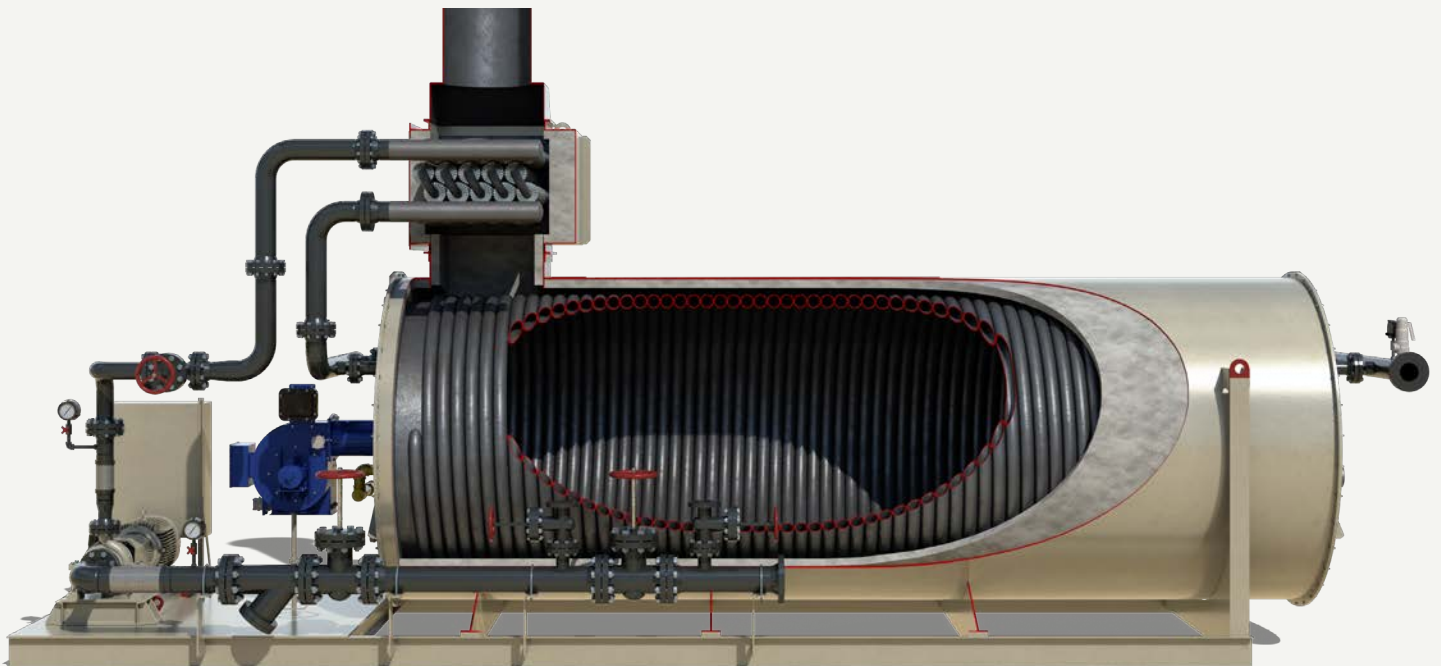
Additional features include:

- High thermal efficiency
- Fully customizable
- Can operate on a variety of fuels including natural gas, LPG, commercial grade fuel oil, or waste oils
- Configurable for use in hazardous areas according to standards set by FM, NEC, NFPA, CSA, ATEX, IECEx, and/or GOST

2-PASS VS 3-PASS

ASTE C builds both two-pass and three-pass heaters. This gives us the experience to provide you with an unbiased recommendation based on your needs.

The illustration below shows the flow of burner gases in a heater with a single helical coil. It is known as a two-pass heater because the burner gases make two passes around the coil.



THERMAL FLUID HEATERS VS PROCESS HEATERS

Thermal Fluid Heaters

Thermal fluid heaters utilize an indirect heating method by heating a liquid medium in the heater and then transfers heat to the end user. Some common transfer fluids are oil, water glycol mixture, and gases.

Thermal fluid heaters are often referred to as:

- Hot Oil Heaters
- HMO Heaters
- Thermic Fluid Heaters
- Fired Heaters

Process Heaters

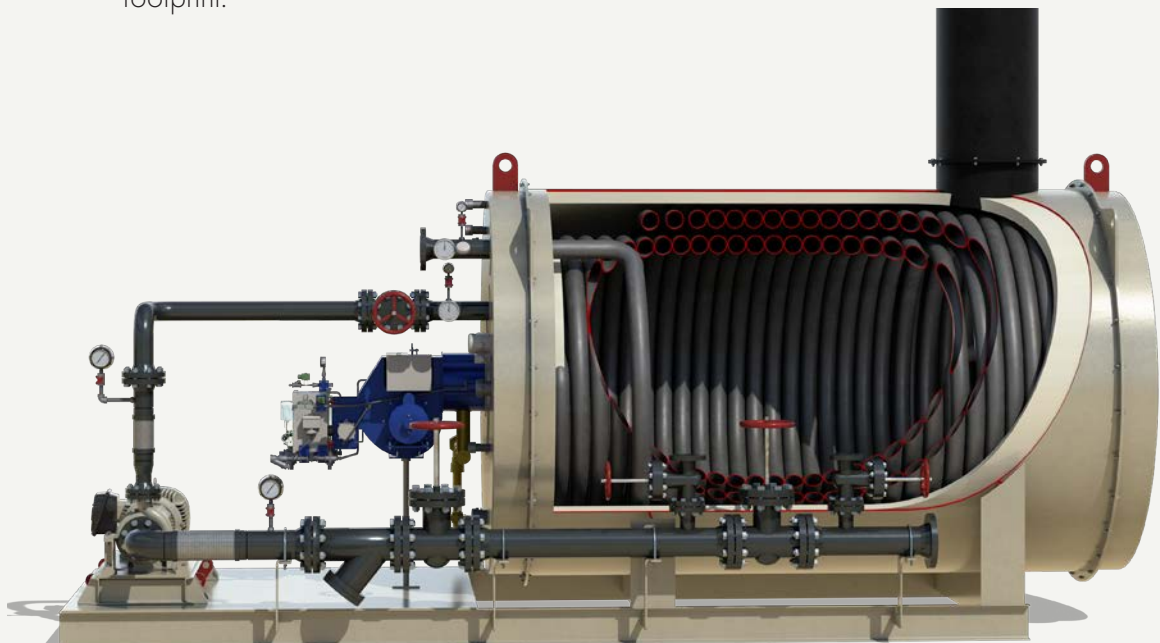
Process heaters are designed to directly heat a fluid product as it flows through the heater. The product may be liquid or gas.

We offer a variety of process heaters with helical coils and others with differing technologies. Some types of process heaters we offer are:

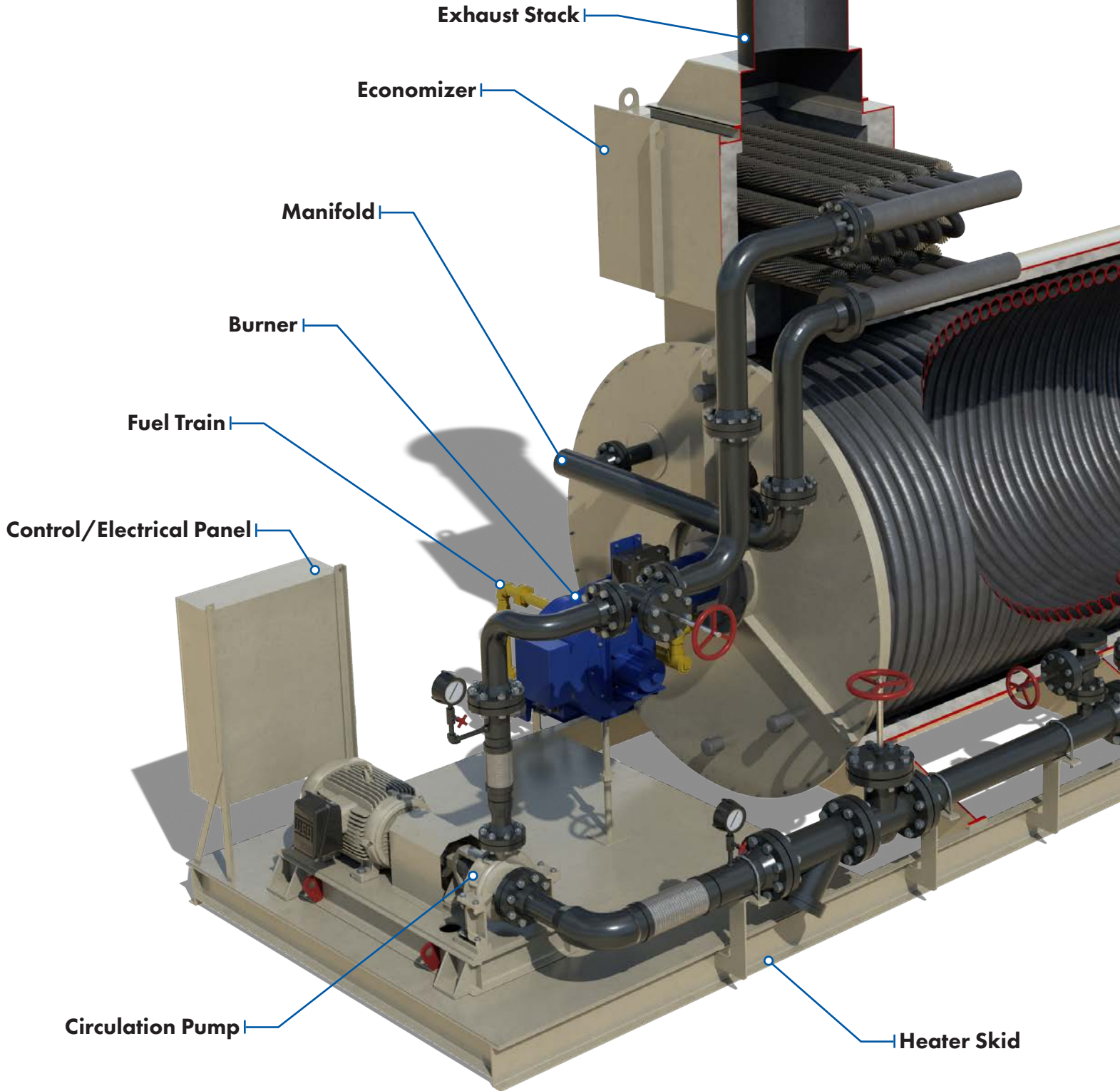
- Regen Gas Heaters
- Booster Heaters
- Convection Heaters
- Reboilers
- Bath Heaters
- Direct Fired Heaters
- Electric Heaters

The illustration below shows the flow of burner gases in a heater with two helical coils. One coil is inside the other. This is a three-pass heater design. Their burner gases make three passes around the two coils.

An advantage of a three-pass heater is that this design has a smaller footprint.

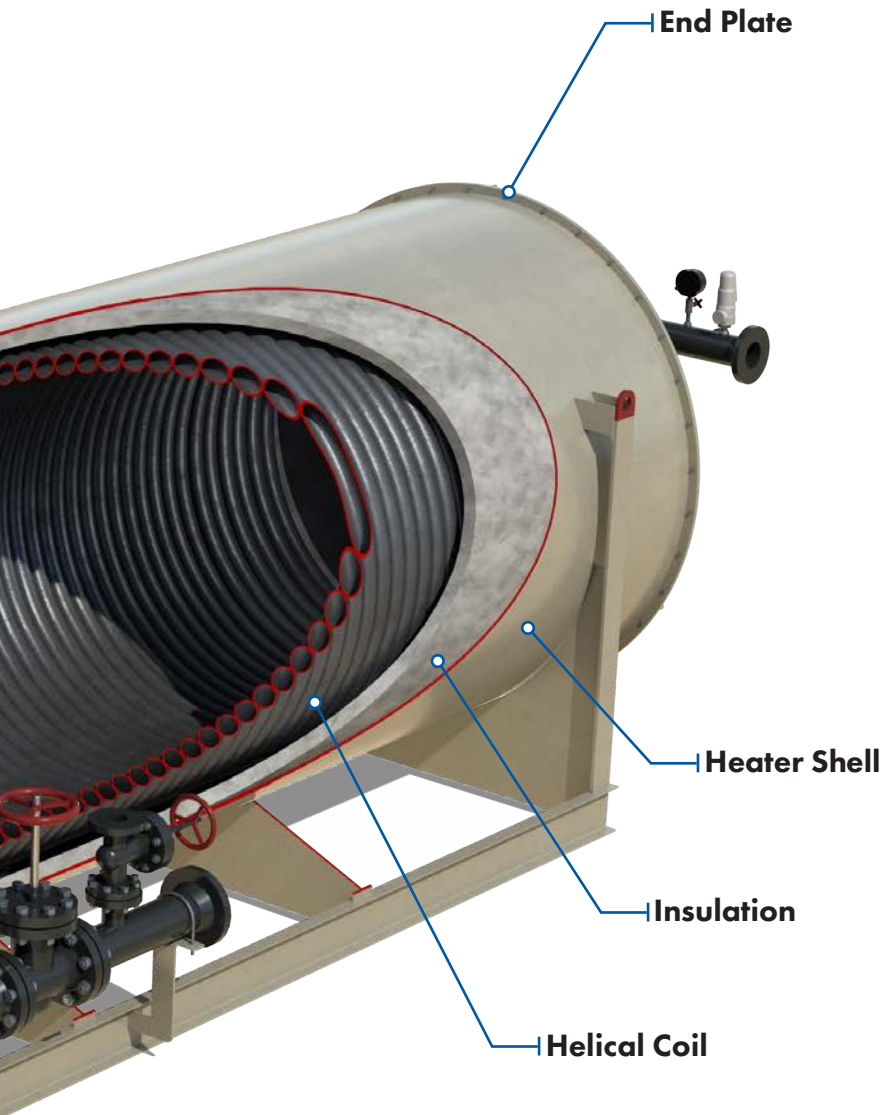


HCI HEATER COMPONENTS



HCI HEATER SERVICE AND SUPPORT

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.



Exhaust Stack

Includes rain cap and protection screen.

Economizer

Optional tube bundle that captures heat from exhaust gases to boost thermal efficiency.

Manifold

The inlet manifold distributes thermal fluid or process fluid to two interwound helical coils.

Burner

The inlet manifold distributes thermal fluid or process fluid to two interwound helical coils.

Fuel Train

Includes pilot fuel train. Assembled and tested at the factory.

Control/Electric Panel

Meets NEC and UL standards. Can be built to meet other standards for hazardous locations. Houses switches, controllers and flame monitor. All controls are prewired and tested.

Circulation Pump

Pumps thermal fluid or process fluid throughout the entire system. The system can be a closed loop or pass through. Optional pump skid (not shown) is available.

Heater Skid

Rigid skid fabricated from structural steel channels (or I-beams). Has skid extension for added support of the fuel train and burner controls.

Helical Coil

Built to ASME code. Carbon or stainless steel rolled pipe.

Insulation

Ceramic fiber blanket insulation. Three inches thick. Additional thickness is optional.

Heater Shell

All-welded construction of 1/4 to 3/8 thick A-36 steel or stainless steel plate, depending on size and use of heater.

End Plate

Bolted to the heater shell and insulated with 5-inch ceramic fiber blanket. Easily removed for access to heater coil. Has peep sight for inspection of coil and flame pattern. Larger heaters also include a manway.



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