

THERMAL FLUID HEATERS

Model HHC and VHC

For High Temperature Heat Transfer Systems



- Fluid temperatures to 750°F
- Safe, fully automatic operation
- Coil constructed to ASME Code
- Simplified maintenance
- Heat recovery options for high efficiency
- Completely packaged
- Conservative design
- Five-year coil warranty for most applications



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DESIGN ADVANTAGES AND BENEFITS

Models HHC and VHC Helical Coil Thermal Fluid Heaters

- **Two-Pass Design** – radiant- and convection-pass for efficient operation.
- **True Helical Coil Design** – Our continuous conservative-bend, radius, helical coil ensures no high velocities or stagnant areas eliminating excessive pipe erosion and fluid gradation found in heaters with 180° bends.
- **High Temperatures with Low Pressures** – First Thermal Heaters can operate at, or near, atmospheric pressure at temperatures as high as 750°F. (A pressure of more than 3,000 psi would be required to produce the same temperature with steam.)
- **Coil Constructed to ASME Code.**
- **Structural Steel Supports** – welded in accordance with AWS requirements.
- **Coil Supports of Stainless Steel** – not exposed to radiant heat.
- **Highly Effective Insulation** – shell internally lined with multi-layered ceramic fiber blanket with an average K factor of 0.46 at operating temperatures.
- **Efficient Burner** – with forced draft, low-excess air and high-turndown ratio. Available for all commercial gases or liquid fuels.
- **Control Panel** – with full programming combustion safeguard, fluid temperature and pressure controls, motor starters, relays, operating switches and lights to indicate operating conditions - all pre-piped, wired and factory-tested for a fully automatic operation. NEMA 1 (standard) with optional NEMA ratings available.
- **Low Maintenance and Long Life** – thermal fluid does not cause scale or corrosion.
- **Conservative Design** – increases equipment life and reduces downtime.
- **Factory-Trained Service Personnel** – available for start up, operator training, and fast emergency service.
- **Computer Design** – for each job for proper flux, film and tubewall temperatures, velocity, ΔT and ΔP to stay well within the limitations of the thermal fluid and materials of construction for long fluid life and to fit your system requirements.
- **Special Controls and Construction Options** – include systems to meet FM, IRI insurance as required, burner management systems, seal welding of shell and piping, sandblasting of shell and piping and applying special coatings for protection against corrosive atmospheres and many other options to meet your system requirements.
- **Limited 5-Year Coil Warranty** – is available on First Thermal Heaters for most applications, thus providing you with financial protection that isn't available from most manufacturers.

TWO PASS DESIGN

Model HHC

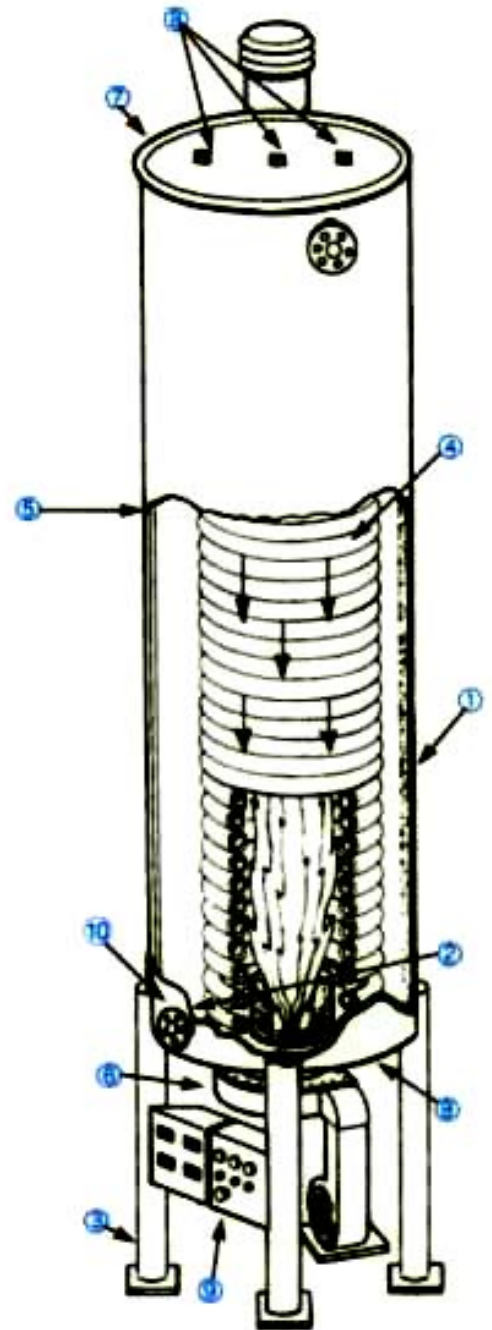
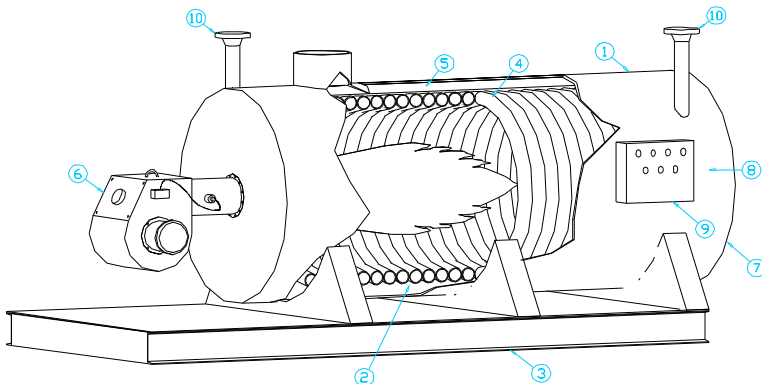
Horizontal offers economical design with maximum accessibility to internals and three prep sites. Sixty-five sizes with capacities from 250,000 to 32,000,000 BTU/Hr., up to 750°F, gas, oil or combination gas/oil firing. Completely packaged. Fully automatic.

Model VHC

Vertical saves valuable plant and production space. Allows quick and easy draining of coil by gravity. Sixty-nine sizes with capacities from 250,000 to 80,000,000 BTU/Hr., up to 750°F., gas, oil or combination gas/oil firing. Completely packaged. Fully automatic.

FEATURES:

- 1) Rugged steel shell (minimum $\frac{3}{4}$ inch up to $\frac{1}{2}$ " thick, depending on heater size) with zip strip.
- 2) Coil supports located out of radiant zone.
- 3) Structural steel shell supports mounted to steel skid with burner control platform.
- 4) ASME Code coil (Schedule 40 seamless pipe, 300 PSIG at 800°F design).
- 5) Shell insulated with low density ($8\#/FT^3$) standard ceramic fiber blanket for low skin temperature and low heat sink.
- 6) Forced draft burner available for wide choice of fuels, turndowns, emissions and fuel efficiencies.
- 7) Bolted end plates with access door.
- 8) Peepsights for viewing flame.
- 9) Burner and controls mounted for easy access.
- 10) ANSI 300# flanges for thermal fluid connections.



TYPICAL APPLICATIONS

For First Thermal Helical Coil Heaters

- Heating evaporators • Molding plastic or rubber products • Textile heat setting • Heating resin kettles • Processing paints and varnishes • Manufacturing linoleum and vinyl floor coverings • Melting asphalt • Heating dyes • Processing food products • Heating platens • Melting soft metals • Heating drying ovens • Drying and baking enamels • Heating chemical reactors • Deodorizing animal and vegetable oils • Evaporating high-boiling materials • Heating chemical process equipment • Desulphurizing, dehydrating and odorizing gas • Heating revolving rolls to high temperatures • Comfort heating • Snow melting • Pipe tracing • Heat for synthetic fiber manufacturing

Our technical staff will be happy to help with advice about any other specialized applications you might need.



		HIGH TEMPERATURE HEAT TRANSFER FLUIDS												
Fluids	Temp°F	300	350	400	450	500	550	600	650	700	750	800		
DOWTHERM A/ MONSANTO VPI*		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
DOWTHERM G		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
THERMINOL 55		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
THERMINOL 59		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
THERMINOL 66		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
THERMINOL 75		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
CALFLO AF		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
CALFLO HTF		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
SYLTHERM 800		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
MULTITHERM PG1 / PARATHERM NF		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
MULTITHERM IG2 / PARATHERM HE		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE
MOBILTHERM 603		BOILING POINT				MAXIMUM OPERATING (BULK) TEMPERATURE								MAXIMUM FILM TEMPERATURE

* Vapor or Liquid Phase Operations. Others Liquid Phase Only.

KEY TO ABOVE



BOILING POINT

MAXIMUM OPERATING (BULK) TEMPERATURE

MAXIMUM FILM TEMPERATURE

The above chart is shown to provide a general picture of many of the commonly used thermal fluids. Consult the fluid manufacturer for complete specifications.

Look to First Thermal Heaters for experience, quality control and dependable service! We have hydrostatic testing facilities, test area for electrical checks, and the skilled technicians for any job, including complete system packaging. You can count on First Thermal Heaters to maintain your critical production specifications and timetable!