

Heat Transfer System

Model HTS

The Model HTS, Heat Transfer System is a UL-listed factory assembled and tested system used in conventional building hydronic heating system which utilizes steam as the heating source. Hot water is supplied at a standard 180°F and is recirculated through the building system by use of centrifugal pumps which are sized to meet specific building requirements. The Model HTS provides air-free hot water at a controlled flow rate, while automatically refilling under normal system losses. The HTS also allows for system thermal expansion/compression based on the building system volume. A UL-listed control panel with single-point power connection is prewired to all electrical sources. Each Unit is custom engineered and designed to meet specific system requirements. All systems are fabricated and welded per ASME Section IX Code and Standards, and are Hydrostatically tested prior to shipment. The Model HTS speeds installation and start-up of building hydronic heating systems which provide significant savings to contractors, engineers, and building owners.

STANDARD CONSTRUCTION

- Structural Channel Base
- Carbon Steel Piping
- Operational Testing
- Pump Isolation Valves
- Hydrostatically Tested
- High Temperature Industrial Enamel Paint

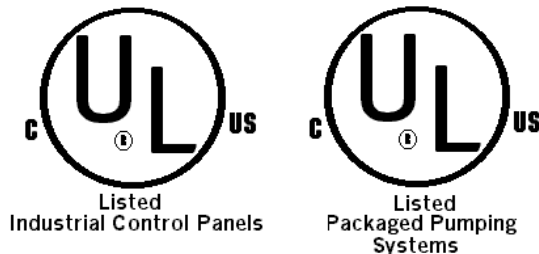
CONDITIONS OF OPERATION

Max. Allowable Pressure:	125 psig / 8.6 bar
Max. Allowable Temperature:	375 °F / 190.5 °C



Legend:

- A. Base-mounted, End-suction Centrifugal Pumps
- B. Shell and Tube , U-tube Heat Exchanger with Steam Trap
- C. Triple Duty Valve
- D. Air Separator with Auto Air Vent
- E. Expansion / Compression Tank
- F. System Inlet / Outlet Thermometers
- G. Pump Differential Pressure Gauge
- H. UL-listed Electrical Control Panel
- I. Make-up Water Assembly



SYSTEM OPTIONS

- Stand-by pumps
- Suction Diffuser
- Panel-mounted Gauges
- Flexible Connectors
- Vibration Isolation

Model HTS
Heat Transfer System Order Form

Form 00-HTS

Specify the following parameters:

- I. System Heat Load = _____ BTU/hr
- II. System Differential Pressure Required = _____ psid
- III. Steam Pressure (@ Heat Exch.) = _____ psig

- IV. Return Temperature = 160 °F
- V. Supply Temperature = 180 °F
- VI. System Electrical = _____ V _____ Hz
- VII. System Volume = _____ Gal.

Note: Tube-side medium assumed to be water, unless otherwise specified.

SYSTEM OPTIONS

- Stand-by Pump
- Steam Pressure Gauges
- Pump Suction Diffuser
- Vertical In-line Pump
- Split-coupled Vertical In-line Pump
- Vacuum Breaker
- Closed-coupled end-suction Centrifugal Pump
- Auto standby pump start on lead pump failure
- Auto Pump Alternation
- Remote start connection
- Condensate Isolation and Check Valves
- Condensate Y- Strainer
- Single-pass Shell and Tube Heat Exchanger

- Panel-mounted Differential Pressure Gauges
- Pump Run Time Hour Meter
- Outdoor use Rating
- Outdoor Cabinet
- System Inlet/Outlet Isolation Valves
- System Flow Switch
- Differential Pressure Switch across Pump suction/discharge
- System drain valves
- Flexible Connectors
- Vibration Isolation

Regardless of system size, temperature, pressure, fluid medium, or space requirements, **EnviroSep** can provide solutions to all specialized needs.

EnviroSep • Fluid & Heat Recovery Systems
A Division of TMT, Inc.
PO Box 857 • Georgetown, SC 29442
Phone (843) 546-7400 / Fax (843) 546-7407
WWW.ENVIROSEP.COM

Typical Specifications for HTS

Furnish and install one **EnviroSep** Model HTS- [A] - [B] - [C] - [D] Heat Transfer System with the system capacity to heat _____ BTU/hr from 160 °F to 180 °F when _____ psig steam is available at the Heat Exchanger.

KEY:

[A] = Model # (BTU/hr)
[B] = # of pumps (1,2,3,etc.)
[C] = Parallel (P) or Stand-by (S) pump designation
[D] = Manual (M) or Automatic (A) alternation for multiple pumps

GENERAL - This package shall be factory assembled with pump(s), heat exchanger, hydronic accessories, shell and tube heat exchanger, fabricated steel frame, interconnection piping(welded per ASME Section IX certified welders), UL-listed Industrial Control Panel factory wired for single-point field connection per NEC, (and including Condensate Steam Trap).

PUMPS-Pump(s) shall be single, end-suction type with radically split, top center-line discharge, self-venting casing. Pump construction shall be cast iron, bronze fitted and shall be fitted with a long-life, product lubricated, drip tight mechanical seal, with O-ring seat retainer. Impeller shaft to be 416SS fitted with a SS shaft sleeve and be supported by two heavy duty ball bearings. The design shall allow back pull out servicing, enabling the complete rotating assembly to be removed without disturbing casing piping connections. The pump shall be mounted on a rigid, single base plate and by flexible with guard to the motor. Seal shall be rated for continuous duty at 270°F, motor shall be open drip proof, NEMA MG-1 with 1.15 service factor

HEAT EXCHANGER - Heat exchanger shall be shell and tube type with removable tube bundle. Shell is carbon steel with cast iron heads and tube sheets. Tubes are ¾" OD copper. Unit is rated for 150 psig at 375 °F. Shell-side connections 4" and larger are 150 lb. ANSI flanges and all 3" and smaller are NPT connection. Unit shall carry U-1 form and have ASME stamp for 150 psig operation.

AIR REMOVAL EQUIPMENT- System shall include one tangential air separator with internal stainless steel collector tube. Connections to be flanged with a rating of 150 psig. System shall be equipped with ¾" Pressure Relief Valve, ¾" Pressure Regulating Valve, ASME Compression / Expansion Tank (sized by or provide system volume and temperature difference), and tank fitting, sight glass, and tank drain connections to tank.

TRIPLE DUTY VALVE- System shall include, on the discharge of each pump, a combination valve

incorporating three functions in one body: tight shut-off, spring closure type silent non-slam check, and flow measured/throttling. Valve body shall be ductile iron with two ¼" NPT connections on each side of the valve seat. The valve disc shall be bronze plug disc type with high impact engineered resin seat to ensure tight shut-off and silent check valve operation. Valve stem shall be SS with flat surfaces provided for adjustment with open end wrench.

SUCTION DIFFUSER- System shall include, on the suction of each pump a suction diffuser with cast iron body, outlet guide vanes and removable SS strainer.

CONTROL PANEL - System shall include one (1) UL - Listed, NEMA 12, Industrial Control Panel with single-point power connection, pre-wired to all electrical components. Panel shall have thru-the-door fused disconnect; magnetic circuit breaker supplementary motor protector with fast-closing contacts, non-reversing 3-pole contactor, and variable setting, bi-metallic overload relay for each motor; 30 mm Foundry-duty switches; 30 mm Corrosion Resistant pilot lights; control transformer; Automatic Alternator (if required). Operation of each pump shall be Hand-Off-Auto with external connection to terminal blocks. When standby pump(s) are used, the standby pump(s) shall manually/automatically(customer specified) start on primary pump failure. All internal wiring shall be placed in conduit.

STEAM TRAP - Steam trap shall be of the mechanical ball float type with cast iron body, NPT connections, and all stainless steel internals. A stainless steel balanced pressure thermostatic air vent shall be incorporated into the trap body withstanding 45°F of superheat and resisting waterhammer without sustaining damage. Internals shall be serviceable without disturbing piping

MANUFACTURER - Shall assume system liability, and performance guarantee and warranty all equipment on system for 12 months after initial start-up.

EnviroSep • Fluid & Heat Recovery Systems
A Division of TMT, Inc.
PO Box 857 • Georgetown, SC 29442
Phone (843) 546-7400 / Fax (843) 546-7407
WWW.ENVIROSEP.COM