

## Heat Transfer System

### Model HTS-HWB

(For use with Gas-fired Hot Water Boiler)

The Model **HTS-HWB**, Heat Transfer System is a UL-listed factory assembled and tested system used in conventional building hydronic heating system which utilizes Gas-fired or Oil-fired Hydronic Heating Boilers 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-HWB** provides air-free hot water at a controlled flow rate, while automatically refilling under normal system losses. The **HTS-HWB** 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-HWB** speeds installation and start-up of building hydronic heating systems which provide significant savings to contractors, engineers, and building owners. An optional, Atmospheric, Gas-fired Hot Water Boiler can be equipped and prewired to the System Control Panel.

### STANDARD CONSTRUCTION

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

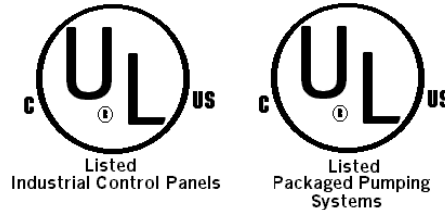
### CONDITIONS OF OPERATION

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. (Optional) Gas-fired Hot Water Boiler
- 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

- Gas-fired Hot Water Boiler
- Stand-by pumps
- Suction Diffuser
- Panel-mounted Gauges
- Flexible connectors
- Vibration Isolation

# Model HTS-HWB Heat Transfer System Order Form

Specify the following parameters:

Form 00-HTS-HWB

I. System Heat Load = \_\_\_\_\_ BTU/hr

IV. Return Temperature = 160 °F

II. System Differential  
Pressure Required = \_\_\_\_\_ psid

V. Supply Temperature = 180 °F

III. Steam Pressure  
(@ Heat Exch.) = \_\_\_\_\_ psig

VI. System Electrical = \_\_\_\_\_ V \_\_\_\_\_ Hz

VII. System Volume = \_\_\_\_\_ Gal.

## SYSTEM OPTIONS

Stand-by Pump

Outdoor Cabinet

Steam Pressure Gauges

System Inlet/Outlet Isolation Valves

Pump Suction Diffuser

System Flow Switch

Vertical In-line Pump

Differential Pressure Switch across Pump  
suction/discharge

Split-coupled Vertical In-line Pump

System drain valves

Closed-coupled end-suction Centrifugal  
Pump

Flexible Connectors

Auto standby pump start on lead pump  
failure

Vibration Isolation

Auto Pump Alternation

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

Remote start connection

Atmospheric, Gas-fired, Hot Water Boiler

Panel-mounted Differential Pressure Gauges

Pump Run Time Hour Meter

Outdoor use Rating

**EnviroSep** • Fluid & Heat Recovery Systems  
A Division of TMT, Inc.  
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# Typical Specifications for HTS-HWB

Furnish and install one **EnviroSep** Model HTS-HWB- [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, 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

**HOT WATER BOILER** – The Boiler shall operate on negative stack pressure and Category I according to ANSI Standards and shall include a built-in draft hood with single exhaust (standard) or dual exhaust. The boiler shall be equipped with a slide-out Burner tray for service and maintenance. The combustion chamber shall be enclosed by high temperature refractory, not less than 2 ½” thickness. The heat exchanger shall be an integral copper finned tube, straight, 7/8” ID, 7 fins per inch. Standard controls include thermometers, High Limit controls, ON/OFF switch, 24VAC control transformer, and factory-mounted flow switch interlocked to pump operation. Standard firing-mode shall be ON/OFF. The gas train shall include manual gas valve, redundant main gas valves, pilot gas pressure regulator, and automatic pilot gas valve.

**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.

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

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