

# HTS Series

## Horizontal Type Transfer System With Gold Pump Package

The feed system shall be a Bryan Model \_\_\_\_\_ horizontal transfer type boiler feed system, with a tank size of \_\_\_\_\_ (60 to 1,000) gallons design to operate at \_\_\_\_\_ PSI boiler relief valve setting with a total boiler capacity of \_\_\_\_\_ lbs/Hr or \_\_\_\_\_ boiler HP.

### HORIZONTAL TRANSFER SYSTEM:

- A. The horizontal transfer system shall have the storage capacity to overflow of at least 1 gallon per 1 boiler horsepower of the boiler(s) it is servicing. The boiler feed pumps shall be supplied with the horizontal transfer system and be capable of pumping twice the evaporation rate of the boiler at 3% above the boiler relief valve setting per the ASME code. The boiler and the horizontal transfer system shall be supplied by the same manufacturer to obtain single source responsibility.
- B. The storage tank shell and flanged and dished (curved) heads shall be constructed of 3/16" thick minimum carbon steel and shall be capable of holding the specified gallons to overflow. The horizontal tank shall be of atmospheric design and be able to accept all condensate returns from the entire steam system including gravity returns, pumped returns, and high pressure returns from steam traps if necessary. All returns to the transfer system shall be identified and discussed with the manufacturer to accommodate the system. The horizontal transfer system will be a stand-mounted tank with pumps mounted below the tank. All exposed metal surfaces shall be protected with a suitable heat and rust resisting paint.
- C. The horizontal transfer system is to be fully trimmed by the manufacturer including the following:
1. Make-Up Water Assembly: A mechanical float-type make-up water control shall be provided to accept incoming water up to a differential pressure of 100 psi. The make-up valve assembly shall mount directly into the tank to eliminate unnecessary external piping and be removable from the outside of the vessel for easy maintenance and inspection. The make-up valve shall be made of brass or bronze with a copper float that does not require external power for operation.
  2. Misc. Gauges: A temperature gauge shall be supplied and installed by the manufacturer. The gauge shall be sized suitable for the operation and design range of the boiler feed system. A gauge glass shall be supplied and installed to indicate the water level in the tank. The gauge glass shall be protected from objects by metal protectors and have shut off valves on both ends.
- D. The horizontal transfer system shall be supplied with a pump package which shall include:

1. Stand: The stand shall be structurally sound and designed for the weight of the unit. The net positive suction head required by the pumps shall govern the stand height. All exposed metal surfaces shall be protected with a suitable heat and rust resisting paint.
2. Pump(s): Pump size shall be based on pump schedule and be able to pump into the boiler at least 3% above the boiler relief valve setting to satisfy the ASME code. The pump shall be a vertical multistage pump (Armstrong VMS, Goulds SSV, Grundfos CR, or similar) with stainless steel impellers and a minimum of 250F seals. The pump motors shall be 3-phase, TEFC motors.
3. Pump Mounting and Piping: The pump(s) shall be mounted to the base. The pump suction piping shall include a gate valve, strainer, and flexible connector for each pump. Pump discharge piping shall include a liquid filled pressure gauge with shut-off valve and pump throttling valve. All suction and discharge components will be factory installed. Piping may be taken apart at the unions or flanges for shipment.
4. Pump Electrical Components: The pump shall be supplied with a TEFC motor. Each pump shall have a thru-the-door (3-phase) pump disconnect switch and 3-phase protection by Class LPJ fusing or similar fuse. The pump shall also be protected from the following: undervoltage, overvoltage, motor overload, ground fault, and phase to ground short. Each pump will have its own variable frequency drive with pressure transducer and pressure controller. The VFD will modulate the pump's output based on a 4-20 mA signal from the transducer. A pressure controller with display shall be provided for ease of start-up and setting the pump discharge to a desired pressure. The circuit for each pump shall also be provided with the following digital displays: Frequency (Hertz), Current (Amps), and Voltage (Volts). An on/off switch and pilot light shall also be provided for each pump. All pump electrical components shall be wired and factory checked before shipment. A fused control circuit transformer shall also be provided to reduce the 3-phase supplied power to 120/1/60 for the control circuit. The complete transfer system system will have single point electrical connection located in a UL listed Nema 12 control panel. Liquid tight conduit shall be used between the panel and external electrical items mounted on the system.

