Steam and Condensate Return Pumps (LMHT-500 models)

A. Approved Manufacturers
1. Kadant Johnson Liqui-Mover
2. ITT Hoffman Pumpless Pump

B. General:
1. Provide a non-electric condensate pump system, pre-piped packaged, with elevated receiver. The pumping pressure to be steam, compressed air, or other compatible inert gas.

C. Package Components:
1. The packaged condensate return system shall incorporate: pumping chamber, float operated non-electric level control, inlet and discharge check valves, level gauge glass assembly for all tanks, isolation hand valve ahead of inlet check valve, and be assembled on a steel skid.

D. Operation:
1. Condensate enters the pump system at the receiver and flows by gravity, through the inlet check, and into the pumping chamber.
2. When the condensate reaches a predetermined high level, the float level control actuates a built-in 3-way valve to admit steam (or other compatible inert gas) into the pumping chamber.
3. Condensate is pushed out of the pumping chamber through the discharge check valve, into the return line.
4. When the condensate reaches a predetermined low level, the level control will reset to its original position, allowing the cycle to repeat itself.
5. The pumping system shall be of a non-cavitating design and capable of handling 365 F condensate in a closed or flash system.

E. Construction:
1. Maximum pumping chamber design pressure is 200 psig
2. Receiver to be steel and ASME labeled for 150 psig and include a replaceable magnesium anode for corrosion protection
3. Pumping chamber to be ductile iron and designed in accordance with ASME Section VIII Div. 1 Boiler & Pressure Code
4. Manufacturers standard check valves on inlet and discharge of each pumping chamber
5. Float level control to have all moving parts in stainless steel, dual stainless steel open coil spring design, and reinforced stainless steel float
6. No external seals or packing
7. Piping to be A53 schedule 40 with malleable iron fittings
8. Level gauge glass assembly to have bronze hand valves and guard rods, and red line tubular glass

F. Warranty (abbreviated):
1. Non-electric condensate pump to be warranted against defects in materials and workmanship for a period of one year after date of shipment. It is agreed that the limit of liability shall be, at the manufacturers sole option, the repair or resupply of a like quantity on non-defective products.

G. Installation:
1. Install pumps per manufacturers instructions
2. Install a pressure reducing valve in the motive pressure line ahead of the pumping chamber and set to approximately 20 psig higher than the backpressure
3. Support piping adjacent to the pump so that no weight is carried on the pump assembly

H. Optional Equipment (as scheduled):
1. NEMA 4 electric cycle counter with (1) set of dry contacts for remote monitoring and keyed reset
2. Removable pumping chamber insulation jacket
3. Pressure gauge assembly with pigtail and shut-off valve
4. Drain piping for pumping chamber and receiver

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