



BESTOBELL STEAM

Steam Traps and Steam Specialties

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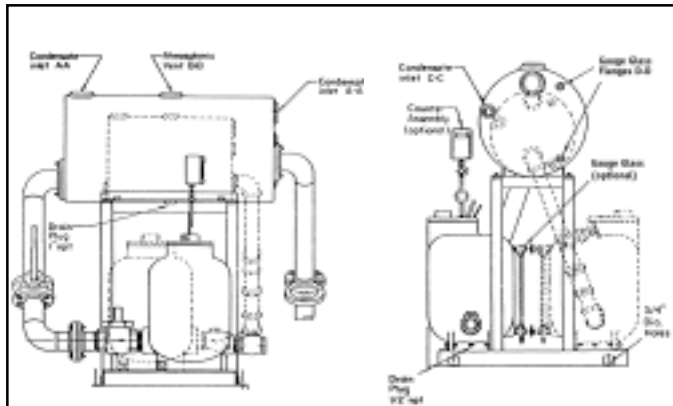
POPS/POPS, Jr. Series

Installation & Maintenance Instructions for Bestobell Steam POPS/POPS, Jr. Series

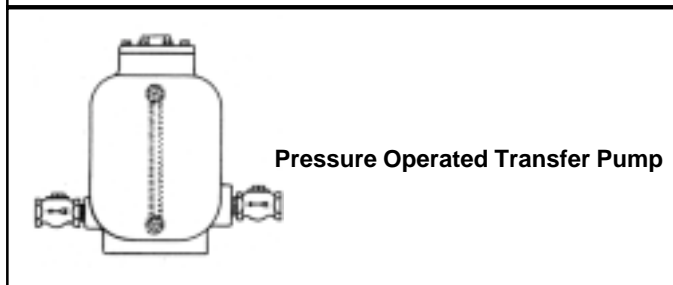
Warning: Bestobell Steam products must only be used, installed and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person. Continued operation may cause system failure or hazard. Prior to servicing equipment, disconnect, shut off, drain and/or bypass all pressurized fluids.

Introduction

This form contains information necessary to install, operate and maintain Pressure Operated Pump units sold by Bestobell Steam. The information is assembled in order, from receiving the product to its proper maintenance, to enable you to follow the product through the various steps necessary to complete implementation.



Pressure Operated Transfer Pump Package



Pressure Operated Transfer Pump

The Pressure Operated Pumps System (POPS and POPS, Jr. and Pump Station Assemblies) are designed as complete assemblies for the pumping of various liquids without the use of electricity. They can be used to return high temperature condensate back to receivers and boiler rooms to save and conserve energy. This can result in significant savings and is highly practical in environments where electricity is impractical.

References

For more information concerning all versions of the Bestobell Steam Pressure Operated Pump Systems (POPS), check the latest editions of the following brochures and booklets listed below. You may also contact your local Bestobell Steam Distributor or the factory directly for further information and additional copies of the listed literature.

- POPS Pump unit brochure Bulletin BBPOPS1197G
- POPS Jr. Pump unit brochure Bulletin BBPOPS Jr.0898G
- Sizing & Selection Guide Bulletin SSPOPS1197
- Installation & Maintenance Guide Bulletin IMPOPS1198
- Pops Data Sheet

General

Bestobell Steam Pressure Operated Pumps (POPS) are designed to move condensate without the use of electricity and return condensate at temperatures above the 210° F limit of conventional electric pumps. It is not the intent of these instructions to give complete design procedures for a heating system, but only to guard against some of the common misapplications. These instructions are general in nature and are for standard cataloged units. Non-standard units may vary in some respects from these instructions. To assure satisfactory operation and to avoid costly damage to the units, the following procedures should be observed.

Installation

- Receiving Inspection** — When the unit is delivered, an immediate visual inspection of the unit and its accessories should be made in the presence of the carrier's representative. If there is any evidence of rough handling or damage, a notation should be made on the delivery receipt. Shipping damages are the responsibility of the carrier, and it is the obligation of the customer to file a claim. If requested, Bestobell Steam will assist in the filing of the claim.
- Uncrating** — When uncrating the pump be sure that all temporary plugs remain in their tapping until you are ready to connect the pump to the system, and all instructional tags are attached.
- Rigging** — Each unit has been carefully tested and inspected at the factory. It is very important that the installers, movers and riggers use extreme care in handling the unit. Chains, cables or other moving equipment should be placed to avoid damage to any part of the unit.
- Foundation** — There are no foundation requirements for the POPS and POPS Jr. pumps. Be sure that the unit is level for proper operation.
- Optional Equipment** — Cycle Counter, Steel Check Valves, Simplex Valves, Simplex Pump Packages and Duplex Pump Packages are available as optional equipment. Special application information can be obtained by contacting your local Bestobell Steam Distributor or Bestobell Steam directly.
- Piping Connections** — All piping should be tight and properly supported by hangers, not by connections.

Figures 1 and 4 are POPS application drawings showing typical piping. These drawings are typical in nature only and should not be construed as piping for specific installations.

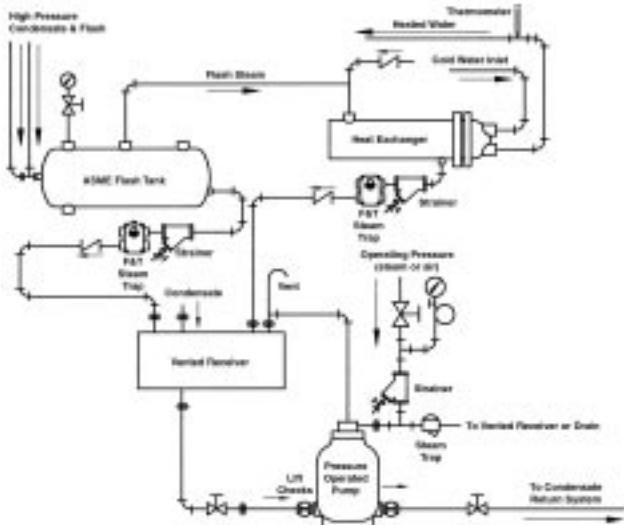


Figure 1 — Illustrates receiving 210° F above condensate from a high-pressure steam source into a flash tank. The steam condensate is separated with the condensate draining to a vented receiver. The flash steam is returned to the heat exchanger. Condensate from the heat exchanger also drains to the vented receiver. In turn, it fills the pressure operated pump.

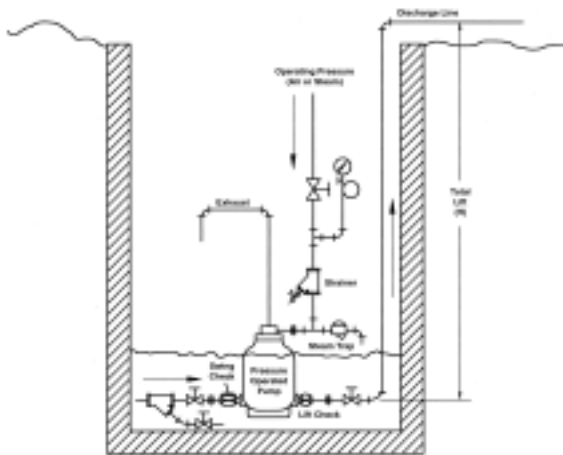


Figure 2 — Illustrates the POPS unit draining water from a sump pit. (Total lift or backpressure is the height (H) in feet x 0.433 plus PSIG in return line).

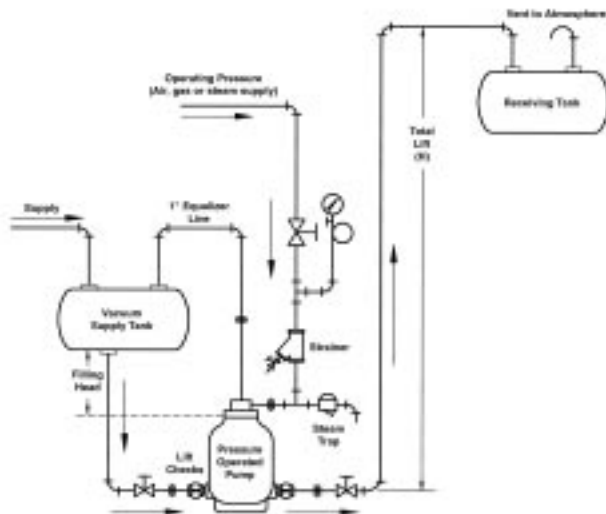


Figure 3 — Illustrates when draining equipment under a vacuum, a pressure equalizer line must be installed to permit pump fill. (Total lift or backpressure is the height (H) in feet x 0.433 plus PSIG in return line).

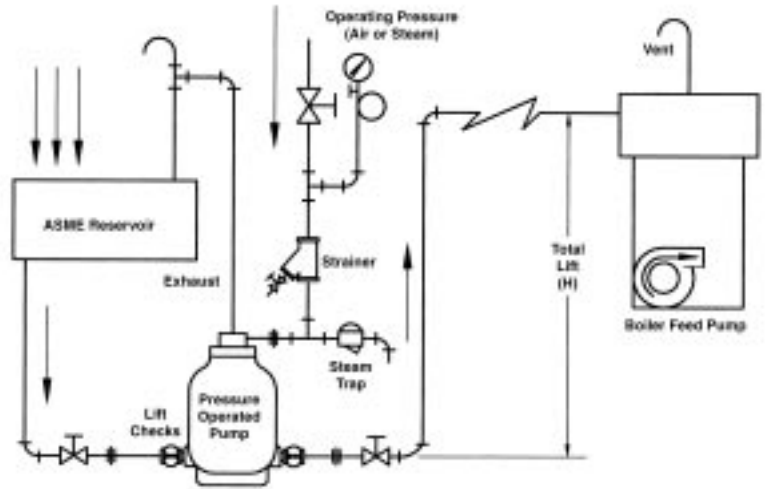


Figure 4 — Illustrates draining condensate to a vented receiver and returning condensate to boiler feed pump. (Total lift or backpressure is the height (H) in feet x 0.433 plus PSIG in return line).

Maintenance

There is very little maintenance required for a Bestobell Pressure Operated Pump (POPS). Weekly and monthly maintenance is practically nonexistent for the application of these pumps, but periodic maintenance should be performed once a year, depending on the water source. At that time all strainers in the system should be cleaned and tanks flushed to prevent the accumulation of rust, minerals and other contaminants.

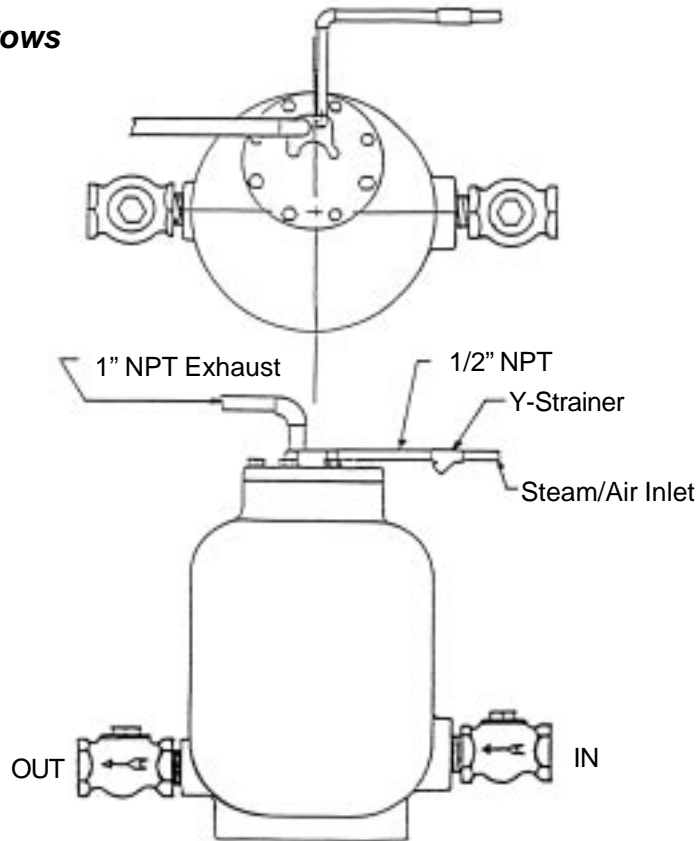
Troubleshooting

A troubleshooting chart is shown below to enable you to isolate any problems you may encounter when operating the Pressure Operated Pump.

Symptom	Possible Cause	Remedy
Pump fills, but does not activate	Float has lost its buoyancy	Replace float ball
Water flows out the exhaust tapping	Check inlet and exhaust valves for leakage	Replace Valves
	Float has lost its buoyancy	Replace float ball

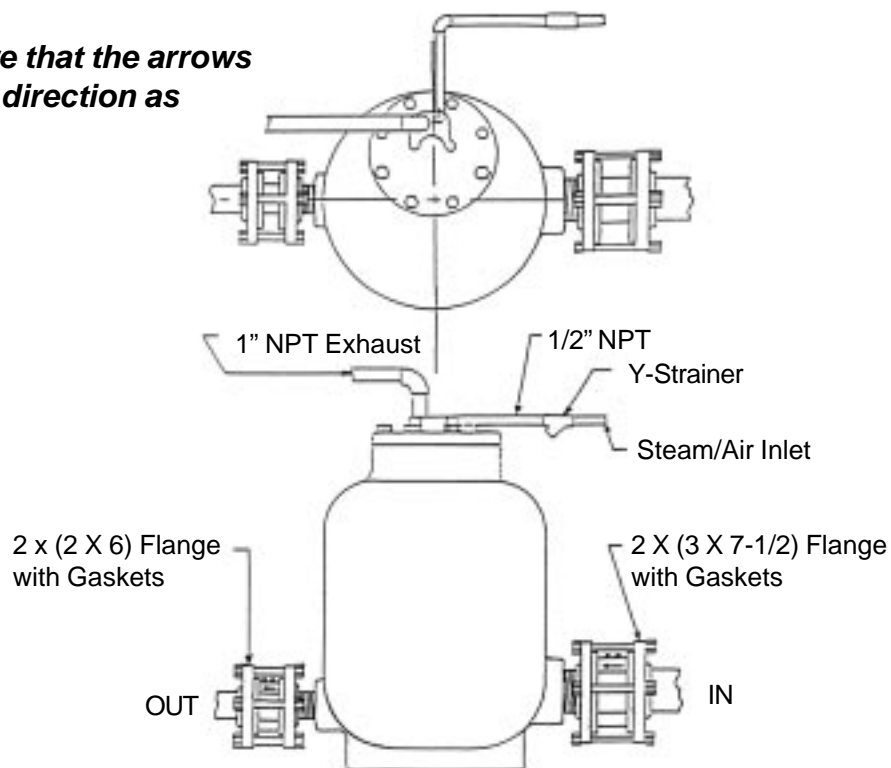
Installation Drawings

Note: Make sure that the arrows are in the same direction as below.



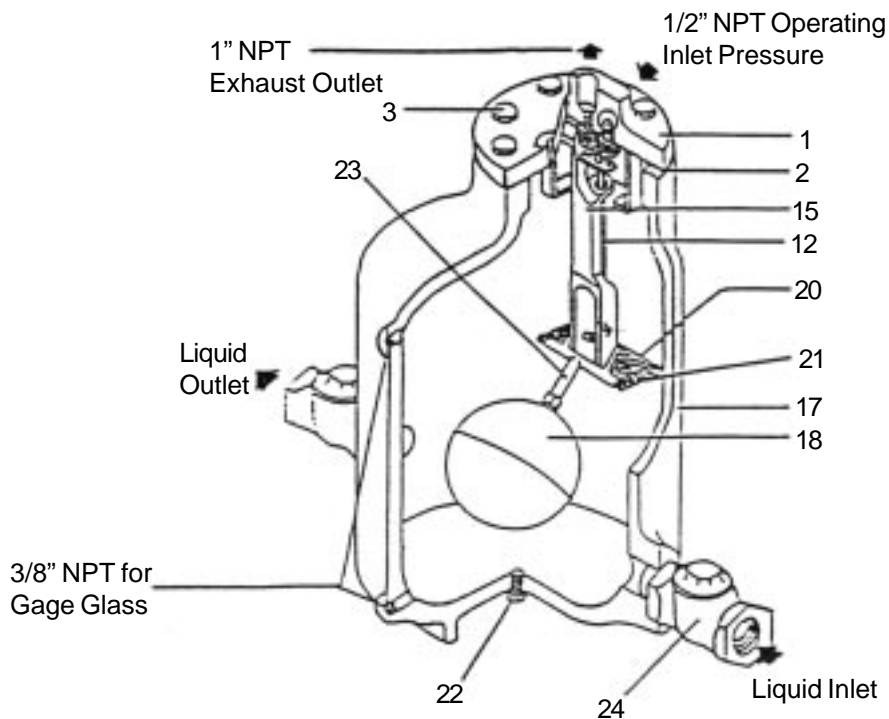
POPS Jr. and POPS Units with Bronze Lift Check Valves

Note: Make sure that the arrows are in the same direction as below.



3" X 2" POPS with Steel & SST Wafer Check Valves

PARTS



No.	Description	Material	Material
1	Cover	Cast Iron	ASTM Clas 30
2	Cover Gasket	Non-Asbestos Fiber	Armstrong TN9001
3	Cover Screws	Steel 1/2-13	SAE 1035 Grade 5
4	Inlet Valve Seat	Stainless Steel	AISI 416
5	Inlet Valve Stem	Stainless Steel	AISI 303
6	Inlet Valve	Stainless Steel	AISI 416
7	Inlet Valve Seal	Stainless Steel	AISI 304
8	Exhaust Valve Seat	Stainless Steel	AISI 416
9	Exhaust Valve	Stainless Steel	AISI 416
10	Exhaust Valve Seal	Stainless Steel	AISI 304
11	Valve Plate	Stainless Steel	AISI 304
12	Actuator Rod	Stainless Steel	AISI 303
13	Baffle	Cast Iron	ASTM Class 30
14	Baffle Screws	SST, 10-32	AISI 303
15	Mounting Bar	Cast Iron	ASTM Class 30
16	Mounting Bar Screws	SST 3/8-16	AISI 304
17	Body	Cast Iron	ASTM Class 30
18	Float & Arm	Stainless Steel	AISI 304
20	Actuator Plate	Stainless Steel	AISI 304
21	Spring	Stainless Steel	AISI 304
22	Plug 1/2"	Cast Iron	ASTM Class 30
23	Float Road	Stainless Steel	AISI 304
24	Check Valves (1", 1-1/2", 2" & 3")	Bronze with bronze disc Steel with SST disc	(Standard) (Optional)