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Inverted Bucket Traps (IBV)

Installation & Maintenance Instructions for Bestobell Steam Inverted Bucket Traps (IBV)

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 a general hazard. Prior to servicing equipment, disconnect, shut off, drain and/or bypass all pressurized fluids.

Read Instructions

The Bestobell Steam **IB18V**, **IB21V** and **IB41V** Series of inverted bucket steam traps provide long, trouble-free service if they are correctly installed and maintained. These traps are of the vertical design and are available in cast iron for pressures to 250 psig or carbon steel for higher operating pressures. They feature all stainless steel internal components. The replaceable valve components are of hardened stainless steels. Each of these "V" versions are designed for vertical piping installations, where the condensate is brought into the trap at the bottom and discharge is from the top of the traps. A few minutes of your time spent reading these instructions and installing the traps as suggested, will save hours of trouble and downtime later.

Pre-Installation

1. Blowdown piping to remove any foreign material.
2. Verify that your Bestobell steam trap will meet system conditions by checking the nameplate for operating differential pressure and maximum pressure and temperature limits of the trap body.
3. Inverted bucket traps are selected based on condensate load, not pipe size. Verify that selection included a safety position.
4. These style traps can only operate properly with the trap body and the internal bucket in a vertical position.
5. This requires that the only recommended installation where the piping is arranged to flow vertically upward. The trap's cover assembly must be uppermost, and the body plumb. Any variation could result in failure to operate properly as the internal bucket could rub along the inside of the trap.
6. Install trap in an accessible location for future checking and maintenance.
7. Isolation valves should always be installed on either side of the trap for service purposes.
8. For Process, Heating, or Drileg applications; these inverted bucket style traps should be located off of a condensate collecting pocket, with the top of the trap below the condensate outlet of the equipment. See typical installation figure.

Operation

Bestobell Steam's IB18V, IB21V, and IB41V inverted

bucket traps feature simple internal stainless steel components that move to close the valve seat when steam enters the trap underneath the bucket assembly. As the steam condenses within the inverted bucket, the bucket drops down within the trap body. Through a linkage arrangement, the valve is opened and condensate is allowed to pass through. Air venting of non-condensable gases is through a small bleed hole drilled in the top of the inverted bucket.

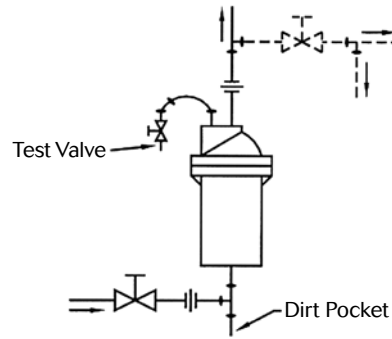
Installation

1. Check that pipe threads are clean and free of shavings. Use proper thread sealant for steam service.
2. Where possible, arrange the piping such that condensate flows to the trap by gravity.
3. Trap each piece of equipment separately.
4. Locate the trap at the lowest point, preferably below the equipment outlet.
5. On most applications, the trap should be a minimum of 10" below the equipment outlet. This drop acts as a reservoir for condensate level changes.
6. Arrange piping and trap location to be easily accessible for inspection and repair.
7. Install bypasses only if required for maintenance.
8. Shutoff valves, unions, and test "tee" after a trap should be installed to provide easier operation, maintenance, and testing.
9. Install an in-line strainer before the trap.
10. Install check valves after trap, especially if the equipment or system being drained is not in continuous operation.
11. Check all pipe sizes to prevent restricted flows, especially in condensate return lines. Undersized returns are a major cause of poor system performance.
12. Insulation after the trap is ideal, but do not insulate the trap.
13. Observe all applicable public and company codes and regulation concerning steam and condensate piping.
14. When starting for first time, apply steam to equipment, then open block valve before trap slowly. This allows condensate to fill bucket area and establish the prime of water.
15. Refer to example illustrations for installations suggestions.

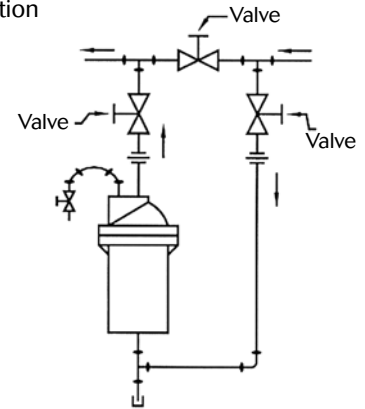
Maintenance

All Models of **IB18V**, **IB21V** or **IB41V**.

1. Check that steam supply is shut-off. Ensure that all system pressures are off and trap is cool before opening.
2. Remove cover (2) from body (1) by removing the bolts around the body flange.
3. Lift the cover and internal mechanism from the body.
4. Unhook bucket unit (3) from lever assembly (4).
5. Remove guide pin assembly (7) and lever by undoing the two screws.
6. Inspect pivot points for wear. Replace as needed.
7. Inspect valve seat (6) and plug (5) (held by clip to lever) for wear or damage. Replace if required.
8. Valve seat can be removed using a socket or closed (box) end wrench.
9. Make sure interior of body is clean and free of any accumulation of dirt.
10. Inspect vent hole in top of bucket until. Make sure it is clean and open.
11. Reassemble in reverse order. Tighten valve seat per torque table. Installing a new body gasket.
12. Install and tighten cover bolts in a diagonal pattern to torque values shown in table.



Basic "V" Series Installation



"V" Series Installation with Bypass Piping

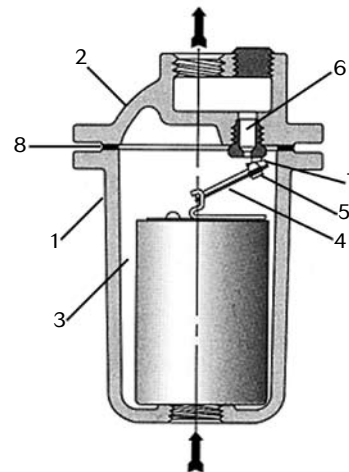
IB18V Cast Iron Body

Trap Model	Size	Valve Seat Torque, lb-ft	Cover Bolts Torque, lb-ft
IB18V210	1/2"	17-20	13-16
IB18V310	3/4"	17-20	13-16
IB18V410	1"	59-65	18-21
IB18V510	1-1/4"	129-140	47-51
IB18V610	1-1/2"	199-220	47-51
IB18V710	2"	199-220	47-51

IB21V and IB41V Carbon Steel Body

Trap Model	Size	Valve Seat Torque, lb-ft	Cover Bolts Torque, lb-ft
IB21V210	1/2"	17-20	13-16
IB21V310	3/4"	17-20	13-16
IB21V410	1"	59-65	18-21
IB21V510	1-1/4"	129-140	44-48
IB21V610	1-1/2"	199-220	47-51
IB21V710	2"	199-220	47-51

Material



Part No.	Component	Material
1	Body	A216CS (IB 18V is CL)
2	Cover	A216CS (IB 18V is CL)
3	Bucket	304 SST
4	Lever	304 SST
5	Valve Plug	Hard surfaced SST
6	Valve Seat	Hard surfaced SST
7	Guide Pin Assembly	304 SST
8	Cover Gasket	Teflon or Non-Asb. fiber