spirax sarco

INSTALLATION AND MAINTENANCE INSTRUCTIONS

IM-2-400-US

December 2006

Inverted Bucket Steam Traps

Installation

1.) Before installing trap, the inlet piping should be carefully blown down to remove any existing pipe debris. **CAUTION:** *Before Installation, inspection or maintenance, ensure that the steam inlet and outlet piping valves are closed and the trap isolated to prevent personnel injury.*

2.) Check the maximum operating pressure stamped on the nameplate. If the actual system operating pressure is greater than the maximum operating pressure of the trap, a trap having a higher operating pressure must be substituted.

3.) Depending upon the type, trap body pattern will require either horizontal or vertical piping. Install trap with bottom and/or arrow cast on trap pointing downward so that the inverted bucket can freely move in a vertical plane.

4.) Locate the trap below and close to the drain point where it is accessible for inspection and servicing. A pipeline strainer should be fitted ahead of the trap along with isolation valves and pipe unions as required by good piping practices.

5. To prevent backflow, a check valve is recommended after the trap when condensate is elevated. With a modulating pressure condition, or on superheated steam service, a check valve should also be located ahead of the trap inlet to prevent prime loss.

6. When draining equipment controlled by modulating valves with vacuum breakers, and whenever greater air venting capability is desired, an auxiliary thermostatic air vent should be fitted in parallel above the trap.

7. Any bypass piping should have reduced capacity and be installed above the trap to reduce the chance of prime and steam loss. However, unless continuous service is necessary, bypass piping should be avoided whenever possible.

8. On startup, slowly open inlet valve, then outlet valve, to establish a 'prime' or water seal around the inverted bucket inside the body. If trap does not have enough startup condensate to 'prime' itself, shut if off and manually pour water into the body. Problems with 'prime' loss may indicate that the trap is oversized for the load and it should be changed to a smaller size.

9.) When installed outdoors, trap will not freeze in continuous operation but can be damaged if steam pressure is lost or inadvertently turned off. To prevent freezeup damage, the body must be drained manually or can be protected automatically with a Spirax Sarco Thermoton set for 75°F opening temperature.

Inspection and Maintenance

Spirax Sarco Inverted Bucket Traps for horizontal piping may be inspected and cleaned without removing the trap from the line. Vertical threaded body types require a union after the outlet to permit disassembly.

1.) **Flash steam** - When condensate at steam temperature is discharged to a lower pressure, part of it re-evaporates, forming flash steam. This should not be confused with live steam when inspecting the operation of steam traps.

2.) **To clean or inspect the trap inlet port** - Remove any obstruction or debris from the inlet cavity. If the trap is fitted with a strainer, make sure the screen perforations are clear and unobstructed.

3.) **To clean, inspect or replace the trap mechanism**

   a.) Remove the cover bolts and cover.

   b.) Remove all dirt and incrustation from the mechanism, trap body and cover. Inspect the body and cover for condensate corrosion.

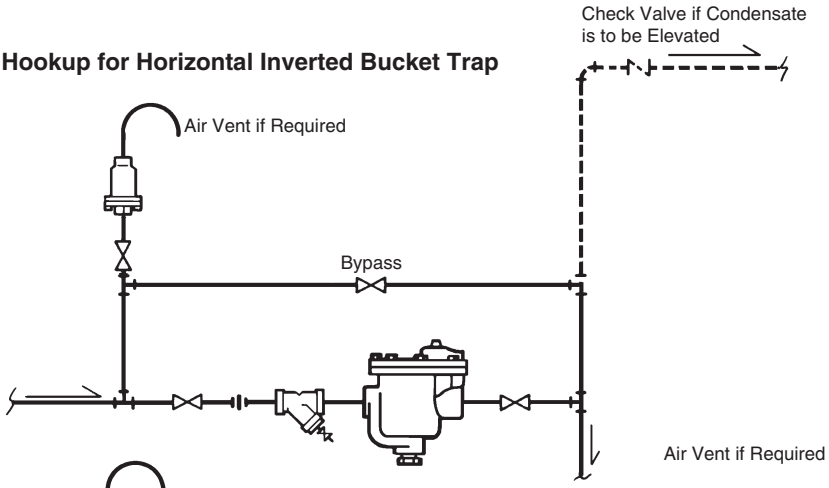
   c.) Inspect the valve head and seat for damage and/or signs of wear or wiredrawing, and replace is required. To remove the seat, detach the bucket arm by removing the pin and unscrew the seat.

   d.) Inspect the vent hole in the bucket and make sure it is clear and fully open.

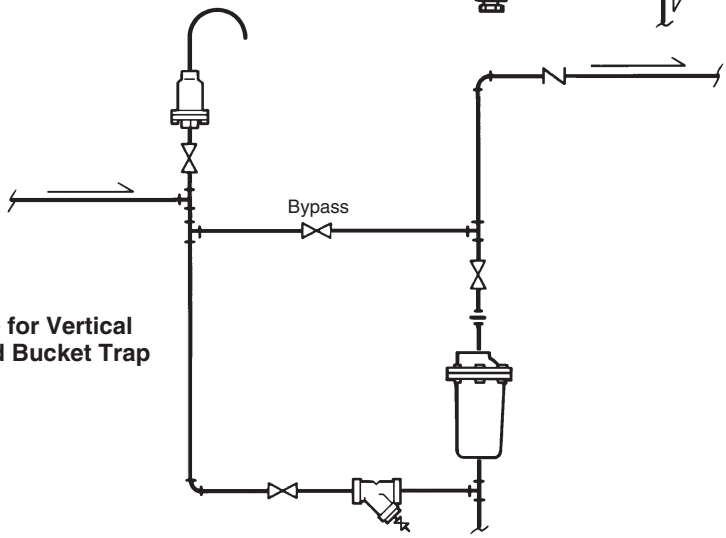
   e.) Remove the old gasket from the cover and/or body and replace with a new gasket.

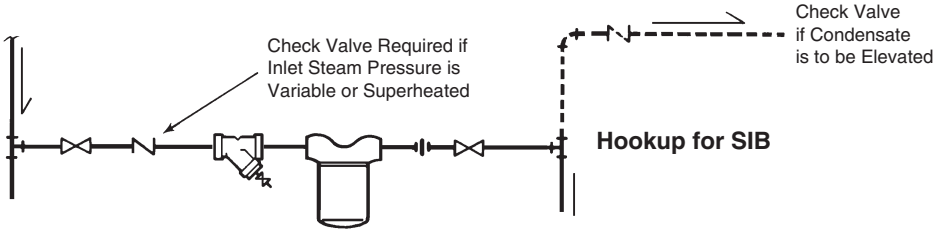
   f.) Reinstall the cover and mechanism to the trap body and tighten the cover bolts. It is recommended that the cover bolts be retightened after the trap has been operating for a few hours to account for gasket relaxation and thermal expansion.

Hookup for Horizontal Inverted Bucket Trap



Hookup for Vertical Inverted Bucket Trap

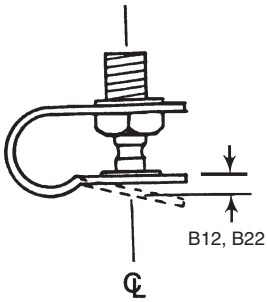


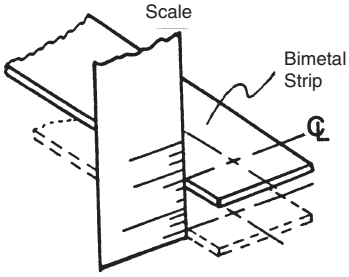


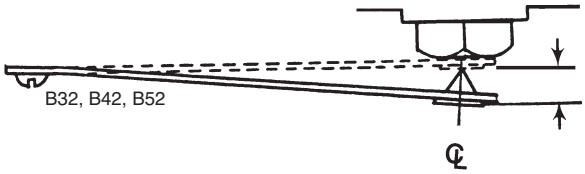
Hookup for SIB

Bucket Trap Air Vent Head Travel

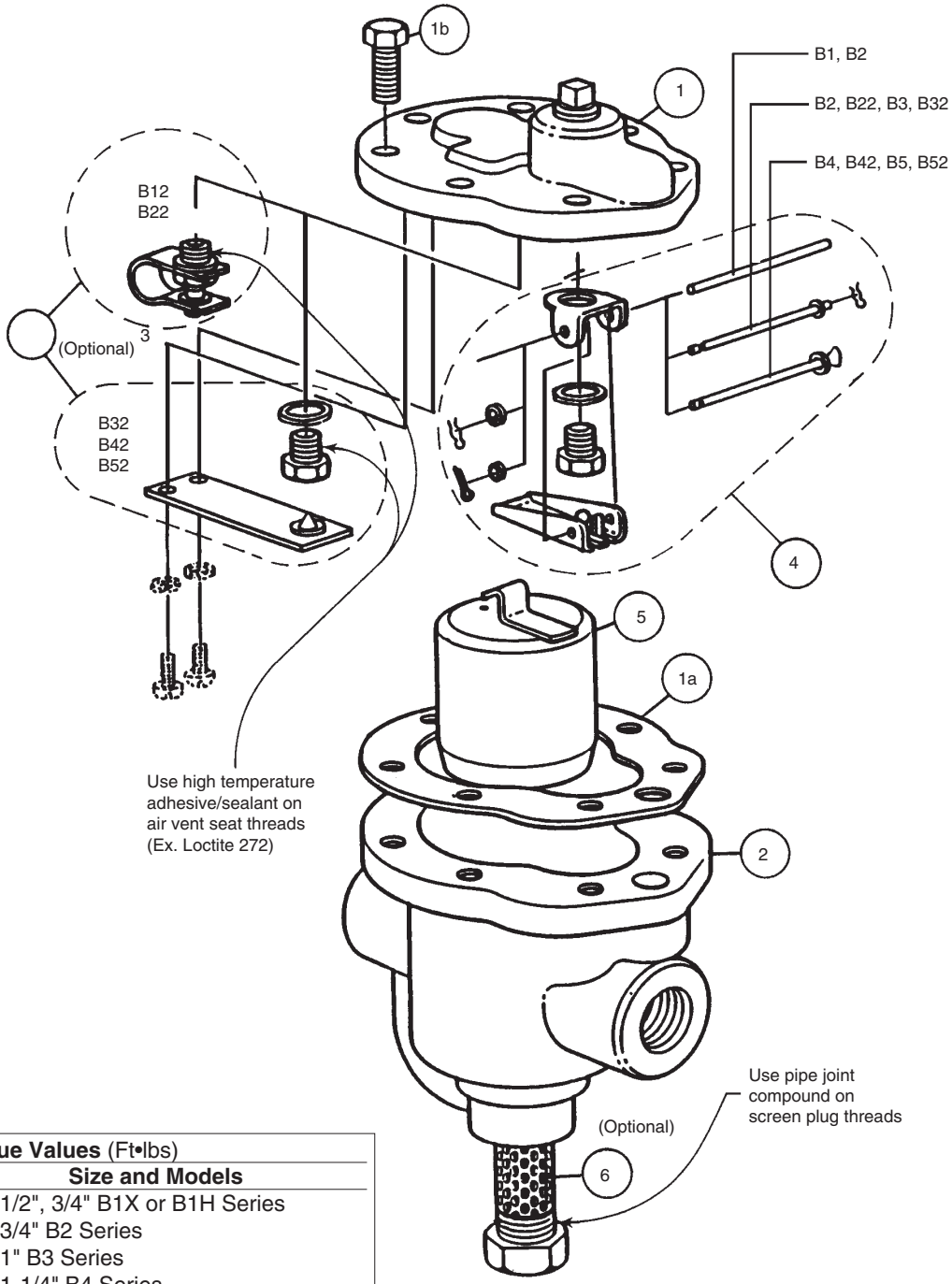
When installing a bucket trap air vent, the following head travels are required when set at 70°F to 80°F ambient. The head travels are measured along the centerline of the head. The head travels are adjusted by bending the bimetallic strip.







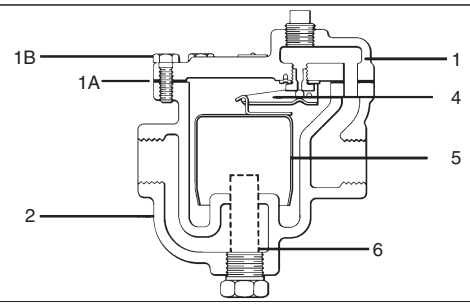
Model	Travel	Tolerance
B12, B22	3/64"	+0.000" -1/64"
B32	3/64"	± 1/64"
B42, B52	3/32"	± 1/64"



Torque Values (Ft•lbs)	
Cover Bolts	**Size and Models**
11-14	1/2", 3/4" B1X or B1H Series
35-39	3/4" B2 Series
21-24	1" B3 Series
55-59	1-1/4" B4 Series
80-85	2" B5 Series
Valve Seats	
11-13	1/2" B1X-75, 125, 180, 250
28-31	1/2", 3/4" B1H Series; 3/4" B2-7 125, 180, 250; 1/2", 3/4" B1X-15, 30
46-50	3/4" B2-15, 30; 1" B3-75, 125, 180
66-70	250, 1" B3-15, 30
195-205	1-1/4" B4 Series; 2" B5-75, 125, 180, 250
250-260	2" B5-15, 30
Air Vent Seats	
11-14	All Models

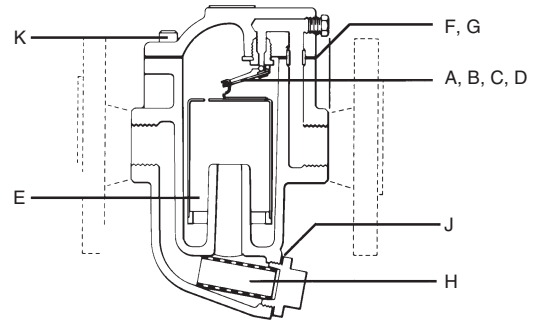
Note: Traps with optional strainers use the same cover bolts and seat torque requirements

Part No.	Description
1	Cover
1a	Cover Gasket
1b	Cover Cap Screws
2	Body
3	Air vent
4	Complete Mechanism
5	Stn. Stl. Bucket
6	Stn. St. Strainer



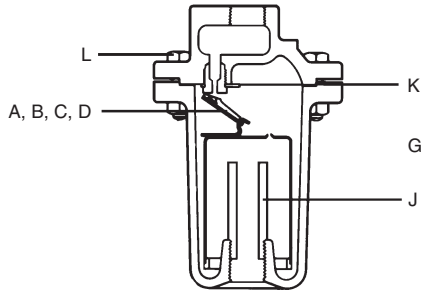
Type B Spare Parts List
(TIS 2.407)

1	Cover	4	Complete Mechanism Assembly
1A	Gasket	5	Bucket and Hook
1B	Cover Bolt	6	Plug Bushing (Strainer Optional)
2	Body		



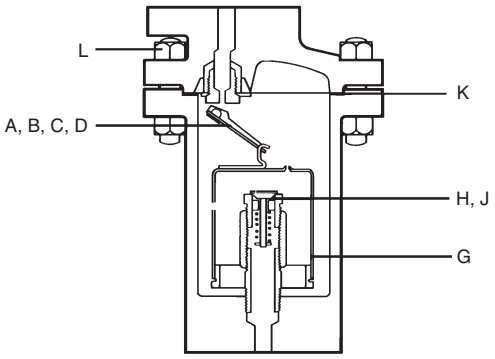
Series HM34 Spare Parts List
(TIS 2.404)

A, B, C, D	Valve and Seat Assembly
E	Bucket
F, G	Cover Gasket and Ferrule
H	Strainer Screen
J	Strainer Screen Gasket
K	Cover Bolts and Nuts



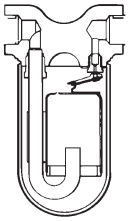
Series 200 Spare Parts List
(TIS 2.401)

A, B, C, D	Valve and Seat Assembly
G	Bucket
J	Internal Tube
K	Cover Gasket
L	Cover Studs and Nuts



Series 600 and 900 Spare Parts
(TIS 2.402, 2.403)

A, B, C, D	Valve and Seat Assembly
G	Bucket
H, J	Check Valve Assembly
K	Cover Gasket
L	Cover Studs and Nuts



Series SIB
(TIS 2.407)

No user serviceable parts.

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