

HST30 & HST30TC clean steam traps

The HST30 and HST30TC are designed to drain condensate from high purity steam systems.

Design conditions

Maximum operating pressure (PMO) 6.0 barg
Maximum allowable temperature (TMA) 170°C
Maximum allowable pressure (PMA) 8.0 barg

Operation

The HST30 and HST30TC traps operate based on the difference in temperature between the steam and condensate. This temperature differential causes the internal bellows to expand and contract, which in turn controls the opening of the orifice in the trap body. Typically, the trap will begin to discharge condensate when this temperature difference approaches 3-5°C.

Installation

Both the HST30 and HST30TC should be orientated vertically with the flow arrow marked on the body pointing downward. A minimum distance of 250mm should be allowed between the drain point and trap inlet to allow condensate to collect during operation. Suggested installations are shown on page 2.

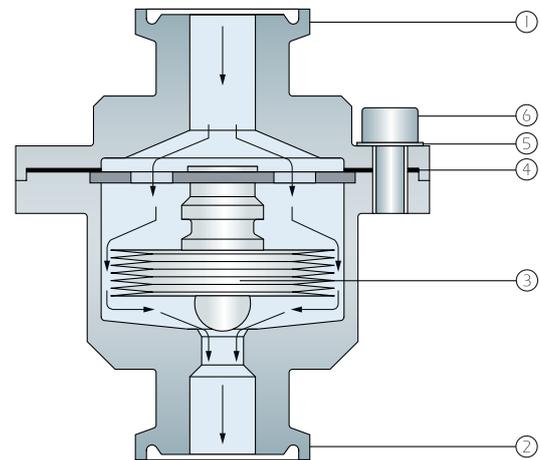
Welding

Where excessive heat input is expected during welding (manual welding) a damp cloth should be wrapped around the trap body to prevent possible damage to the seal material. Alternatively, the internal element assembly and body seal should be removed prior to welding.

Maintenance

Both trap types may be dismantled for cleaning or maintenance by removing the three body screws, and for the HST30TC, by slackening and removing the central body clamp. The element assembly is held in place by the body halves, and is easily removed for inspection or replacement. If deposit build-up is evident the trap and element may be cleaned either ultrasonically or in a mild acid solution. To reassemble the HST30 locate the element in the recess of the outlet body. Fit a new seal in the inlet body recess. Bring body halves together, aligning the screw holes. Locate product label and fit body screws, firstly lubricating with silicone grease. Tighten screws to 8.8Nm. Re-torque screws prior to installation. For the HST30TC, the assembly sequence is the same. The clamp closure should be tightened to 10-15Nm.

Before fitting a replacement element, ensure that the seating surface in the outlet body is undamaged. If damage is evident, the trap should be replaced.



Part	Material
1 Inlet connection	316L stainless steel
2 Outlet connection	316L stainless steel
3 Element assembly	316/316L stainless steel
4 Seal	PTFE composite
5 Label	304 stainless steel
6 Bolt	Stainless steel
7 Body Clamp	Stainless steel

Item 7 relevant to HST30TC only
Items 5 & 6 not applicable to HST30TC model

Available spares

Element assembly (3) and seal (4)

Troubleshooting

Trap continually discharges steam: Firstly, establish that the visible discharge is not flash steam which will always be present as a steam trap discharges to atmosphere. If live steam, the trap should be isolated and dismantled for inspection.

Once dismantled, check that the trap is free of any particulates which may prevent the trap from closing. This is especially relevant for new installations.

Inspect the seating area for signs of damage or deposit build-up. Deposit build-up may be removed through cleaning. If damage to the seating surface is evident the trap should be replaced.

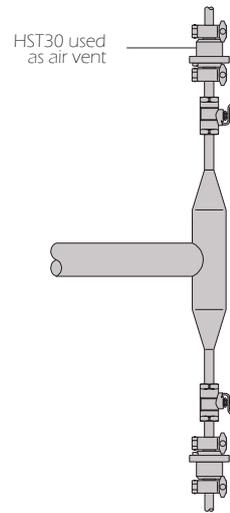
Inspect the bellows for signs of over-expansion, a condition which may occur if the trap has been exposed to superheat. If signs of over expansion are evident the element assembly should be replaced.

Trap fails to discharge condensate: An unlikely condition, but one which may result if the bellows have been exposed to superheat, a condition which will cause the bellows to permanently swell.

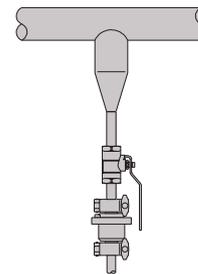
Failure to discharge condensate can also be caused through steam locking. Steam locking typically occurs where steam filling a horizontal run of piping proceeding a trap restricts the flow of condensate to the trap. If steam locking is suspected consult Staitech for further assistance.

If the trap is cold, firstly ensure that it has not been isolated. Blockage through debris build up is the most likely cause of trap failure in this condition. If blockage is suspected the trap should be isolated and dismantled for inspection. The source of contamination should be established prior to re-commissioning.

Typical end of main drain



Typical main line drainage



Typical block and bleed arrangement

