Staitech

HST20
Installation and Maintenance Instructions

HST20 Clean Steam Trap
The HST20 is designed to drain condensate from clean steam systems.

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

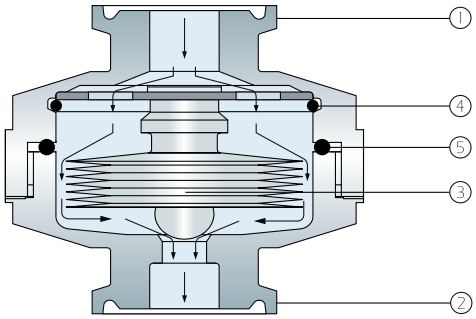
Operation
The HST20 trap operates based on the difference in temperature between the steam and condensate. This temperature differential causes the internal bellows to expand and contract which in turn controls the opening of the orifice in the trap body. Typically, the trap will begin to discharge condensate when this temperature difference exceeds 3°C.

Installation
The trap should be orientated vertically in order to ensure correct operation. A flow arrow on the trap body indicates the direction of flow. 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 overleaf.

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.

Tightening of compression fittings
1. Insert tube into fitting, ensuring that the tube is against step in trap body. Finger tighten nut.
2. Tighten nut 1-1/4 turns. Fitting and trap body can be marked to give a reference point during tightening.

Re-tightening of compression fittings
1. Insert tubing with pre-swaged ferrules into trap body until front ferrule seats.
2. Tighten nut by hand until resistance is encountered. Tighten slightly with spanner.



Part		Material
1	Inlet connection	316L stainless steel
2	Outlet connection	316L stainless steel
3	Element assembly	316/316L stainless steel
4	Element retainer	Stainless steel
5	Seal HST20	PTFE-Viton envelope
	Seal HST20S	FEP-Viton
6	Body clamp	304 stainless steel

Available spares
Element assembly (3), element retainer (4) and seal (5)

Maintenance

The trap may be dismantled for cleaning or maintenance by removing the body clamp (6), at which point the body halves will separate. The element assembly (3) is held in place by the element retainer (4). The retainer is released by compressing the 'ears' using long nosed pliers or similar tool. Once released, the element assembly can be removed.

Prior to reassembly, check to ensure that the trap seating surfaces are undamaged. If damaged, the trap should be replaced.

To reassemble the trap, firstly place the element retainer around the centre section of the element with the 'ears' facing the bellows. Locate the element in the recess of the inlet body, and whilst holding the element against the body, compress the ears of the retaining clip and locate in the body groove. Check to ensure that all corner segments of the retainer are located in the body groove. Fit new seal and bring body halves together. Fit body clamp and tighten screws incrementally to 3-4 Nm. If the trap is fitted with a hinged clamp, tighten nut to 4-5 Nm.

Troubleshooting

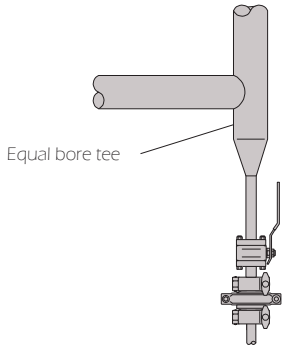
Trap continually discharges steam: Firstly, establish that the visible discharge is not flash steam which will always be present as a steam trap discharges to atmosphere. If live steam, the trap should be isolated and dismantled for inspection.

Once dismantled, 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 overexpansion, 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.

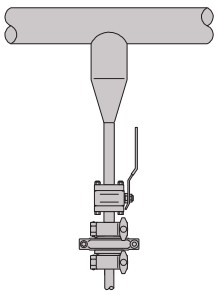
Trap fails to discharge condensate: An unlikely condition, but one which may be caused through steam locking. Steam locking typically occurs where steam filling a horizontal run of piping proceeding a trap restricts the flow of condensate to the trap. If steam locking is suspected consult Staitech for 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.

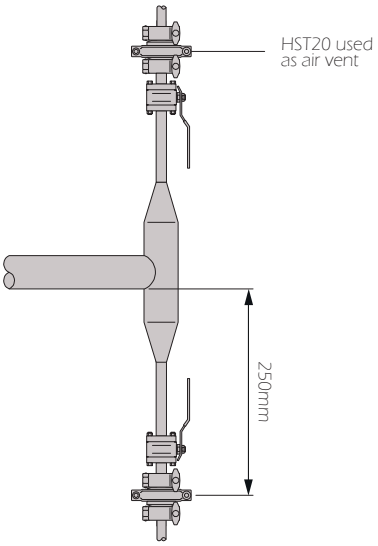
Typical change in elevation drain point



Typical main line drainage



Typical end of main drain



Staitech

Staitech Ltd · PO Box 152 · Stroud
Glos · GL6 8YT · UK
Tel: +44 (0) 1543 882736 · Fax: +44 (0) 1543 882744
E-mail: sales@staitech.com · Web: www.staitech.com