

HSC50 Hygienic Sample Cooler

Installation and Maintenance Instructions

IM-HSC50
06/09

Staitech

HSC50 Hygienic Sample Cooler

The HSC50 Hygienic Sample Cooler is designed to allow clean steam and high purity water samples to be taken quickly and easily whilst maintaining product sterility during testing.

Design conditions

Coil design pressure 10 barg
Shell design pressure 10 barg

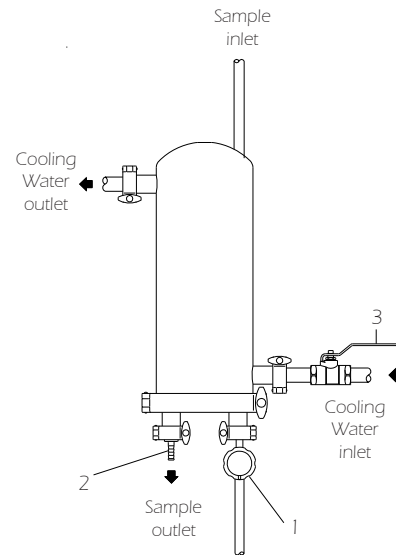
Installation

The sample cooler should be orientated vertically and fixed in place using a standard 4" pipe clamp. Cooling medium; typically mains or chilled water, should be connected to the lower body side connection. In order to allow the flow of cooling medium to be controlled during testing an isolation valve(3) should be included. The cooling water outlet should be piped to drain, and be free of obstructions or isolation valves. An orifice in the cooling water supply can be used to control the flow of cooling water.

Where steam is the sample medium, a valve(1) suitable for continuous steam duty(HSV60) must be used. Valves with a 'soft' seat will rapidly fail due to erosion of the seating surfaces, losing their ability to give appropriate control or isolate.

Operation

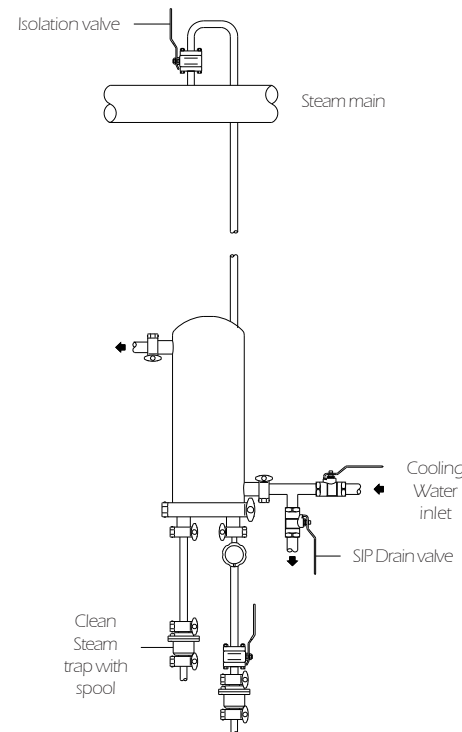
1. Open the cooling water inlet valve(3) and ensure that a flow of cooling medium is present.
2. Slowly open the sample inlet valve(1) until a sample is obtained. Excessive sample flow will result in a high sample temperature. Both cooling water and sample valves can be regulated to adjust the sample outlet temperature.
3. Once a suitable sample has been obtained the sample inlet valve(1) and cooling water valve(3) should be isolated. If no further samples are required the main steam supply should then be isolated and the sample valve(1) opened fully. This will allow any residual condensate held within the cooler to drain through the supply leg steam trap(see over for installation drawing).



Accessories

1.	HSV60 Sample Valve
2.	1/4"/8mm Hose adaptor
3.	Cooling water valve

Typical HSC50 installation for steam sampling



To ensure a representative steam sample is obtained the steam feed should be taken off the top of the steam main or header as illustrated.

The steam supply should drop below the sample valve and be fitted with a suitable steam trap. The steam supply to the sample valve should be taken off the side of this vertical supply. If used, the HSV60 sample valve should be installed with the sample inlet in the horizontal as illustrated.

Caution: The HSC50 will become hot during operation and sterilisation. Personnel should be protected against contact with the installation with appropriate insulation or guarding.

Sterilisation in place(SIP)

Prior to testing or at periodic intervals it may be appropriate to sterilise the HSC50 to ensure that sample integrity is maintained during testing.

In order to sterilise the HSC50 'in place' the following installation is recommended.

1. A drain valve should be included between the cooling water isolation valve and cooling water inlet to allow residual cooling water to be purged from the shell prior to sterilisation. Unless drained, this water will boil during sterilisation.

The cooling water outlet connection should always be vented to atmosphere during sterilisation to prevent any pressure build up in the shell of the unit.

2. A steam trap should be fitted on the sample outlet connection. A minimum drain leg of 150mm should be allowed between the sample outlet connection and the trap to ensure that the coil is kept free of condensate during sterilisation.

To sterilise the HSC50 first ensure that the shell has been drained of cooling water and that the spool and steam trap have been fitted. Open the steam main isolation valve and allow the supply piping to warm. Gently open the steam sample valve to allow steam in to the coil of the HSC50. Sterilise as required.

Once sterilisation is complete, isolate the sample inlet valve and allow the unit to cool. Remove the spool and trap. Isolate the cooling water drain valve. The unit is now ready for normal use.