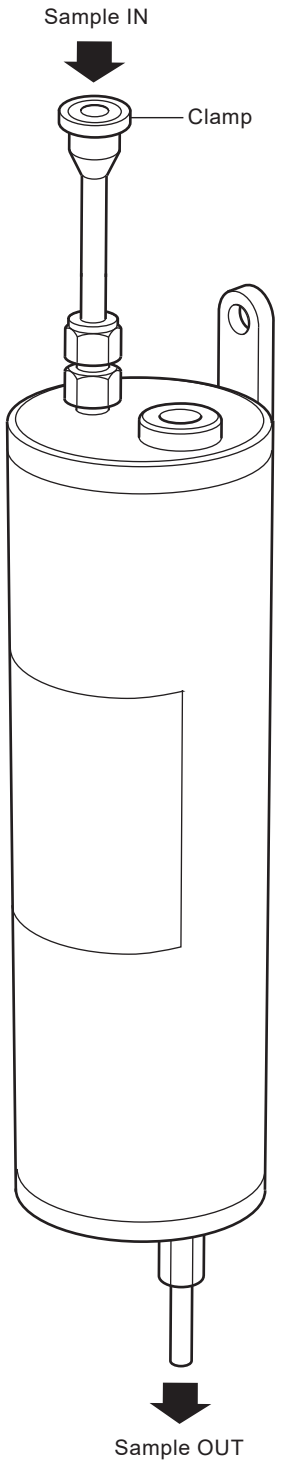
SSC20
Sanitary Sample Cooler

Description

The Spirax Sarco SSC20 sanitary sample cooler has been specifically designed for taking high quality chemical, conductivity and microbiological samples quickly and safely from clean/ pure steam, water for injection (WFI) and other high purity media systems.
The unit consists of high quality 316L stainless steel components and utilises a counter current flow to maximise cooler efficiency, resulting in a compact, space saving design.
The unit is provided with integral pre drilled mounting brackets to allow simple installation at point of use.
Designed, manufactured and approved for Steam and Condensate applications. This product complies with EC1935:2004 Food Contact Materials. It also complies with regulation EC2023:2006 on good manufacturing practice for materials and articles intended to come into contact with food.



Surface finish

Sample contact surfaces are compliant to current ASME BPE requirements.
Ra Maximum 0.5 µ-m Ra (20 µ-in Ra).

Principal features:

- Internal surface finish of coil better than 0.5 µ-m Ra (20 µ-in Ra) to ensure high sterility.
- Coil manufactured from fully traceable 316L stainless steel.
- Self-draining design to eliminate sample retention.
- Fully sterilisable/autoclavable - to ensure integrity of unit between samples.
- Integral mounting bracket to facilitate simple installation.

WARNING: The SSC20 is not sterile as supplied.

Sterilisation in Place (SIP) prior to testing or at periodic intervals. It may be appropriate to sterilise the SSC20 to ensure that sample integrity is maintained during testing.
For further details on SIP, to include recommended installation, refer to Spirax Sarco.
Example of Customer sterilization process (recommendation) - Expose to saturated steam for 20 minutes at 122 °C, or 5 minutes at 134 °C.
The inlet temperature should be high enough so that the outlet too can be fully sterilised.

Packaging

All packaging of the SSC20 sanitary sample cooler is conducted in an environment segregated from other non stainless steel manufacture and is in accordance with ASME BPE.

- Sample inlet and outlet connections are capped.
- Each Sample Cooler is individually packaged within an "ISO CLASS 7" clean environment with cooling water ends and sampling ends fitted with protective end cap. The product is then sealed in a protective plastic bag.

Standards

The SSC20 has been manufactured and built in general accordance with ASME BPE standards.

Certification

The SSC20 can be supplied with the following certification if requested at the time of ordering:

- Full EN 10204 3.1 Validation Pack - Chargeable.
- Typical Internal Coil Bore and Adaptor Face Surface Finish - F.O.C.
- Certificate of Compliance for FDA, and ADI Free Statement - F.O.C.
- TSE-BSE Statement - F.O.C.
- EC1935:2004 Declaration of Compliance - F.O.C.
- Declaration of Conformity BS EN ISO 14644-1:2015 Class 7 Clean Room - F.O.C.
- Typical Test Report - F.O.C.

Sizes and pipe connections

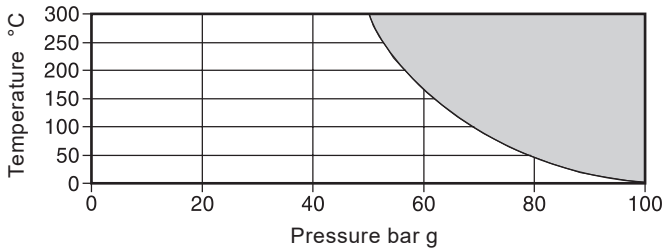
Cooling water inlet and outlet connections	BSP version	½" BSP
	NPT version	½" NPT
Sample tube inlet and outlet connections	½" ASME BPE compatible adaptor for clamp fitting (clamp not supplied) on sample inlet. 6 mm O/D on sample outlet.	

Materials

Body and coil	Stainless steel 316L (1.4404)

Pressure/temperature limits

Coil



The product **must not** be used in this region.

Body

Maximum design pressure	10 bar g @ 100 °C
Maximum design temperature	100 °C @ 10 bar g
Designed for a maximum cold hydraulic test pressure of 16 bar g	

Note: The pressure/temperature limits for the clamp adaptor are dependant on the manufacturer's recommendations

Performance

Tables below show typical sample outlet temperatures above cooling water inlet temperatures for several pressures and cooling water flowrates.

Example

A sample flowrate of 30 l/h is required from a boiler operating at 10 bar g. For a cooling water flowrate of 0.3 l/s from Table 1 the sample outlet temperature would be 4 °C above the cooling water inlet temperature. If the cooling water is at 15 °C, the sample temperature would be 19 °C.

Table 2 is used in the same way for steam.

Samples may not be taken where marked '-' as the flow is limited by the sample inlet valve capacity.

Table 1 Water (e.g. WFI - water for injection)

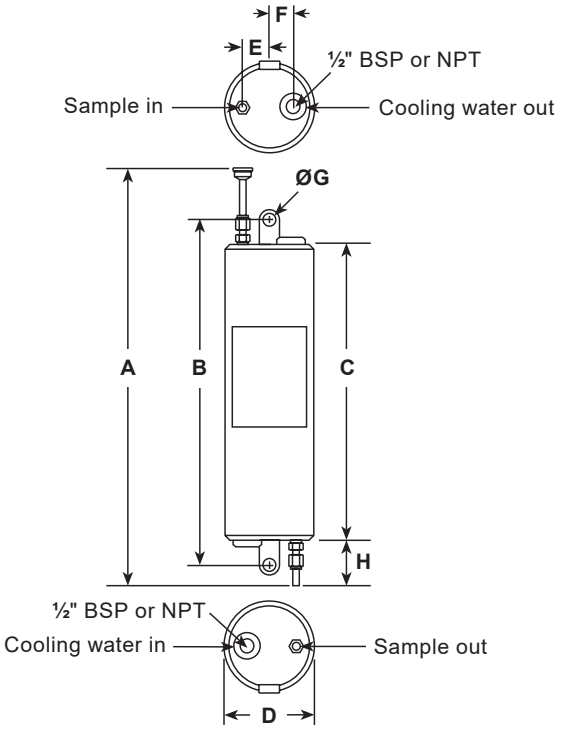
Sample flowrate l/h	Cooling water flowrate 0.1 l/sec					Cooling water flowrate 0.3 l/sec					Cooling water flow 0.6 l/sec				
	Boiler pressure bar g														
	1	3	7	10	20	1	3	7	10	20	1	3	7	10	20
10	1 °C	1 °C	3 °C	6 °C	6 °C	0 °C	0 °C	1 °C	1 °C	4 °C	0 °C	0 °C	0 °C	0 °C	2 °C
20	2 °C	2 °C	6 °C	8 °C	8 °C	1 °C	1 °C	2 °C	2 °C	6 °C	0 °C	0 °C	0 °C	1 °C	4 °C
30	5 °C	5 °C	8 °C	11 °C	11 °C	3 °C	3 °C	4 °C	4 °C	8 °C	0 °C	0 °C	2 °C	3 °C	6 °C
40	7 °C	7 °C	11 °C	13 °C	13 °C	5 °C	5 °C	6 °C	6 °C	10 °C	1 °C	1 °C	2 °C	3 °C	8 °C
50	10 °C	10 °C	13 °C	15 °C	15 °C	6 °C	6 °C	8 °C	8 °C	12 °C	3 °C	3 °C	4 °C	5 °C	9 °C
60	14 °C	14 °C	16 °C	18 °C	18 °C	9 °C	9 °C	10 °C	10 °C	14 °C	4 °C	5 °C	5 °C	6 °C	11 °C
80	16 °C	18 °C	20 °C	22 °C	22 °C	11 °C	12 °C	13 °C	14 °C	18 °C	6 °C	7 °C	8 °C	9 °C	15 °C
100	18 °C	20 °C	24 °C	26 °C	27 °C	15 °C	16 °C	16 °C	18 °C	22 °C	10 °C	11 °C	12 °C	13 °C	18 °C
120	22 °C	23 °C	29 °C	30 °C	31 °C	17 °C	18 °C	20 °C	23 °C	26 °C	11 °C	13 °C	15 °C	17 °C	22 °C

Table 2 Saturated steam

Sample flowrate kg/h	Cooling water flowrate 0.1 l/sec						Cooling water flowrate 0.3 l/sec						Cooling water flowrate 0.6 l/sec					
	Boiler pressure bar g																	
	0.5	2	5	7	10	20	0.5	2	5	7	10	20	0.5	2	5	7	10	20
5	3 °C	3 °C	4 °C	5 °C	6 °C	6 °C	2 °C	2 °C	3 °C	3 °C	4 °C	4 °C	1 °C	1 °C	1 °C	2 °C	2 °C	2 °C
10	-	7 °C	8 °C	8 °C	8 °C	9 °C	-	4 °C	4 °C	4 °C	4 °C	5 °C	-	1 °C	2 °C	2 °C	2 °C	2 °C
15	-	-	9 °C	10 °C	10 °C	11 °C	-	-	5 °C	6 °C	6 °C	7 °C	-	-	2 °C	2 °C	3 °C	4 °C
20	-	-	-	12 °C	13 °C	14 °C	-	-	-	8 °C	9 °C	9 °C	-	-	-	4 °C	5 °C	6 °C
30	-	-	-	-	21 °C	21 °C	-	-	-	-	14 °C	14 °C	-	-	-	-	9 °C	10 °C
40	-	-	-	-	-	28 °C	-	-	-	-	-	20 °C	-	-	-	-	-	13 °C
50	-	-	-	-	-	35 °C	-	-	-	-	-	25 °C	-	-	-	-	-	17 °C
60	-	-	-	-	-	42 °C	-	-	-	-	-	30 °C	-	-	-	-	-	21 °C
70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Dimensions (approximate) in millimetres

A	B	C	D	E	F	G	H
450	350	300	90	27	23.5	13	55



Weight (approximate) in kg

Cooler	3.1

How to order

Example: 1 off Spirax Sarco type SSC20 sanitary sample cooler with ½" sanitary clamp sample inlet connection and maximum coil internal surface finish of 0.5 µ-m Ra. The cooling water connections are to be BSP.