



## 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 utilizes a counter current flow to maximize cooler efficiency, resulting in a compact, space saving design.

All sample contact surfaces are compliant to current ASME BPE requirements, surface finish of better than 20  $\mu$ -in Ra (0.5  $\mu$ -m Ra).

The unit is provided with an integral pre drilled mounting bracket to allow simple installation at point of use.

### Principal features:

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

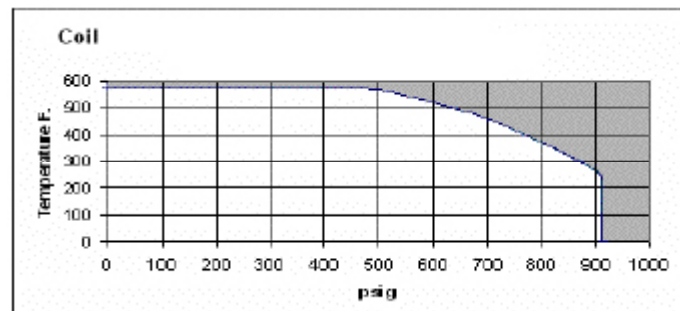
### Sizes and pipe connections

Cooling water inlet and outlet connections	NPT version	1/2" NPT
	Optional - BSP version	1/2" BSP

Sample tube inlet and outlet connections	1/2" adaptor for clamp fitting (clamp not supplied) on sample inlet. 6 mm O/D on sample outlet.
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### Limiting conditions

Part	Design temperature	Design pressure
Body	212°F	145 psig
Cold hydraulic test pressure		232 psig

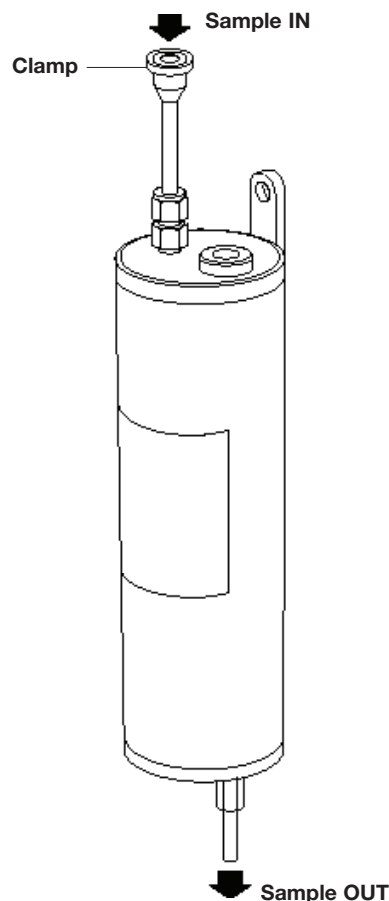


The product must not be used in this region.

**Clamp** - Pressure and temperature dependent on clamp manufacturers recommendation.

### Materials

Body	Austenitic stainless steel grade 316L
Coil	Austenitic stainless steel grade 316L



### Surface finish

Sample contact surfaces are compliant to current ASME BPE requirements.

Ra Maximum 20  $\mu$ -in Ra (0.5  $\mu$ -m Ra).

### Packaging

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

- Sample Inlet and outlet connections are capped.
- Sample coolers are sealed in 100-micron thick plastic bags.

### Certification

If requested at the time of order the SSC20 can be supplied with the following certification:

- Materials certificates to EN 10204 3.1
- Internal coil surface finish certification.

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## Performance

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

### Example

A sample flowrate of 0.13 GPM is required from a boiler operating at 145 psig. For a cooling water flowrate of 4.8 GPM from Table 1 the sample outlet temperature would be 7°F above the cooling water inlet temperature. If the cooling water is at 60°F, the sample temperature would be 67°F. 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 Saturated water (e.g. boiler water)**

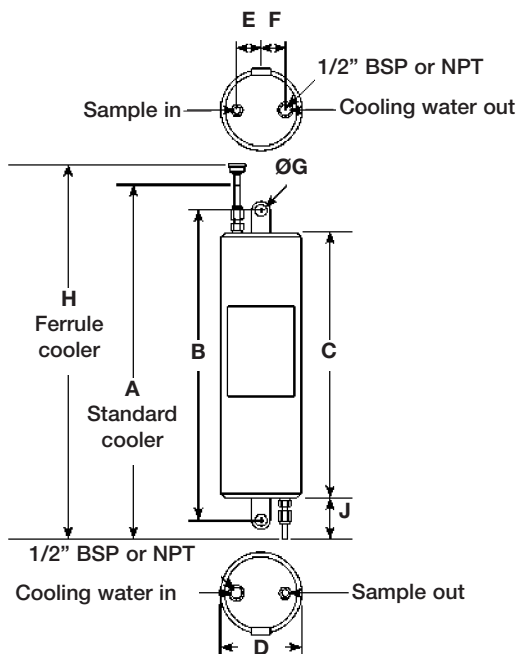
Sample Flowrate GPM	Cooling water flowrate 1.6 GPM					Cooling water flowrate 4.8 GPM					Cooling water flowrate 9.5 GPM				
	Boiler pressure psig														
	15	45	100	145	290	15	45	100	145	290	15	45	100	145	200
0.04	2°F	2°F	5°F	11°F	11°F	0°F	0°F	2°F	2°F	7°F	0°F	0°F	0°F	0°F	4°F
0.09	4°F	4°F	11°F	14°F	14°F	2°F	2°F	4°F	4°F	11°F	0°F	0°F	0°F	2°F	7°F
0.13	9°F	9°F	14°F	20°F	20°F	5°F	5°F	7°F	7°F	14°F	0°F	0°F	4°F	5°F	11°F
0.18	13°F	13°F	20°F	23°F	23°F	9°F	9°F	11°F	11°F	18°F	2°F	2°F	4°F	5°F	14°F
0.22	18°F	18°F	23°F	27°F	27°F	11°F	11°F	14°F	14°F	22°	5°F	5°F	7°F	9°F	16°F
0.26	25°F	25°F	29°F	32°F	32°F	16°F	16°F	18°F	18°F	25°F	7°F	9°F	9°F	11°F	20°F
0.35	29°F	32°F	36°F	40°F	40°F	20°F	22°F	23°F	25°F	32°F	11°F	13°F	14°F	16°F	27°F
0.44	32°F	36°F	43°F	47°F	49°F	27°F	29°F	29°F	32°F	40°F	18°F	20°F	22°F	23°F	32°F
0.53	40°F	41°F	52°F	54°F	56°F	31°F	32°F	36°F	41°F	47°F	20°F	23°F	27°F	31°F	40°F

**Table 2 Saturated steam**

Sample Flowrate bl/h	Cooling water flowrate 1.6 GPM					Cooling water flowrate 4.8 GPM					Cooling water flowrate 9.5 GPM							
	Boiler pressure psig																	
	7	30	75	100	145	290	7	30	75	100	145	290	7	30	75	100	145	290
11	5°F	5°F	7°F	9°F	11°F	11°F	4°F	4°F	5°F	5°F	7°F	7°F	2°F	2°F	2°F	4°F	4°F	4°F
22	-	13°F	14°F	14°F	14°F	16°F	-	7°F	7°F	7°F	7°F	9°F	-	2°F	4°F	4°F	4°F	4°F
33	-	-	16°F	18°F	18°F	20°F	-	-	9°F	11°F	11°F	13°F	-	-	4°F	4°F	5°F	7°F
44	-	-	-	22°F	23°F	25°F	-	-	-	14°F	16°F	16°F	-	-	-	7°F	9°F	11°F
66	-	-	-	-	38°F	38°F	-	-	-	-	25°F	25°F	-	-	-	-	16°F	18°F
88	-	-	-	-	-	50°F	-	-	-	-	-	36°F	-	-	-	-	-	23°F
110	-	-	-	-	-	63°F	-	-	-	-	-	45°F	-	-	-	-	-	31°F
132	-	-	-	-	-	76°F	-	-	-	-	-	54°F	-	-	-	-	-	38°F
154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Dimensions (approximate) in inches

A	B	C	D	E	F	G	H	J
16.1	13.8	11.8	3.5	1.0	0.9	0.5	17.7	2.2



## How to order

Example: 1 of Spirax Sarco type SSC20 sanitary sample cooler with 1/2" sanitary clamp sample inlet connection and maximum coil internal surface finish of 20 µ-in Ra (0.5 µ-m Ra). The cooling water connections are to be BSP.

## Installation

See Installation and Maintenance Instructions for full details, as insufficient information is given here for safe installation.

### Notes on installation

**WARNING:-** To avoid the risk of scalding, it is essential that a full flow of cooling water is present before opening the sample inlet valve. Always close the sample inlet valve before turning off the cooling water. Sample pipework becomes very hot under normal working conditions, and will cause burns if touched.

We recommend the use of corrosion resistant pipework suitable for the fluid being sampled.

Keep the length of all pipe runs to the minimum.

Cooling water must be clean and free from scale forming salts.

The sample cooler must be mounted vertically.

The cooling water inlet is connected in 1/2" nominal bore pipe via an inlet valve.

The cooling water outlet should be piped to an open drain or funnel.

The sample inlet pipe should be in 6 mm O/D tube.

We recommend that a funnel piped to drain is located under the outlet, with sufficient space below it for a beaker or similar sample container.

## Weights (approximate)

Cooler	6.8 lbs
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## Maintenance

No routine maintenance is required.

TI-P403-82-US 5.13