SC20 Sample Cooler
Installation and Maintenance Instructions

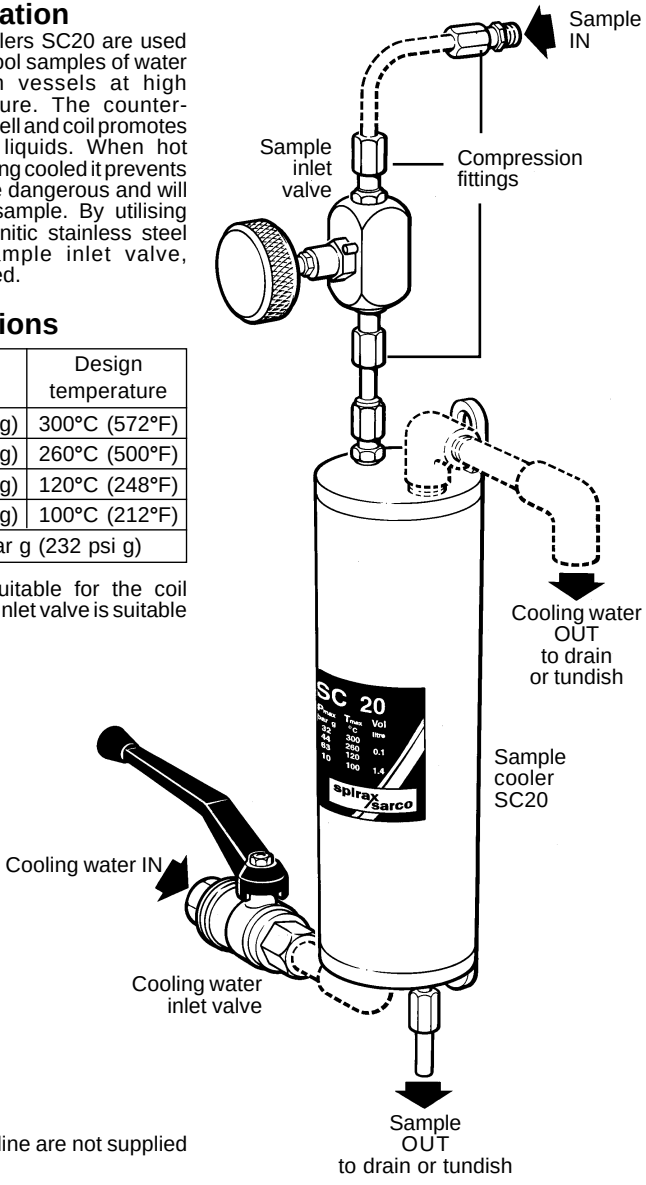
1. General information

Spirax Sarco sample coolers SC20 are used when it is necessary to cool samples of water or process liquor from vessels at high temperature and pressure. The counter-current flow through the shell and coil promotes efficient cooling of hot liquids. When hot pressurised liquids are being cooled it prevents 'flashing-off' which can be dangerous and will result in an inaccurate sample. By utilising corrosion resistant austenitic stainless steel for the cooler and sample inlet valve, contamination is minimised.

2. Limiting conditions

Part	Design pressure	Design temperature
Coil	32 bar g (464 psi g)	300°C (572°F)
	44 bar g (638 psi g)	260°C (500°F)
	63 bar g (913 psi g)	120°C (248°F)
Body	10 bar g (145 psi g)	100°C (212°F)
Cold hydraulic test 16 bar g (232 psi g)		

Sample inlet valve is suitable for the coil conditions. Cooling water inlet valve is suitable for the body conditions.



Note:
Parts shown in dotted outline are not supplied by Spirax Sarco.

3. Installation

The sample cooler has mounting brackets suitable for bolting to a wall or steelwork. The cooler should be fixed in a position that is accessible for collecting the cooled sample, which is taken from the bottom of the unit.
The recommended piping configuration is as shown in the drawing.
The cooling water IN should be piped in ½" nominal bore pipe via the cooling water inlet valve.
A ½" BSP/NPT Male/Female elbow makes a suitable connector.
To avoid the possibility of an air lock at the top of the sample cooler, do not allow the thread of the connector to protrude into the cooler body.
The cooling water OUT should be piped to an open drain or tundish.
The sample IN should be piped in 6 mm O/D (¼" O/D NPT versions) pipe. We recommend the use of austenitic stainless steel material to ensure contamination free samples. It is also recommended that any pipe runs are kept to a minimum. Fit two of the compression fittings to the sample inlet valve using PTFE tape or a thread sealant. The valve can then be fitted to the stub end of the coil inlet. The handwheel may be located at any position convenient for operation. Flow should be in the direction of the arrow. After a while under working conditions it may be necessary to tighten the gland nut as the grafoil packing sometimes settles when subjected to high temperatures. An additional compression fitting is supplied for fitting at the sample take-off point. Where boiler water samples are taken from a **Spirax Sarco** Auto TDS system a screwed ¼" sample take-off point is provided.
No connection is required on the sample OUT. Sufficient access should be available for placing a container to collect the cooled sample. We recommend that a tundish piped to drain is located underneath this outlet.
It should be noted that the sample pipework and sample inlet valve will become hot under working conditions therefore accidental contact should be prevented.

4. Operation

It is essential that cooling water is flowing before opening the sample inlet valve.
Follow this procedure for safe operation and accurate sampling:-

Open the cooling water inlet valve and ensure that a flow can be seen at the cooling water outlet.

- Gradually open the sample inlet valve and regulate the flow to achieve a cooled sample. In most cases about 25°C is ideal.
- Allow the sample to run for a while before collection. This will ensure that a true sample is collected for analysis.
- When sufficient sample has been collected firmly close the sample inlet valve first and then the cooling water inlet valve.

After closing the sample inlet valve the sample OUT connection may drip for a few minutes whilst the coil drains.

5. Maintenance

No maintenance is required.

6. Spares

The following components are available as spares:-

Component	Part No.
Sample inlet valve BSP	4037900
Sample inlet valve NPT	4037990
Compression fitting C.S. BSP	0962373
Compression fitting S.S. BSP	0963248
Compression fitting S.S. NPT	0963249