

INSTALLATION AND MAINTENANCE INSTRUCTIONS SAMPLE COOLERS SC332 – SC432 – SC532

GENERAL

- These instructions must be carefully read before any work involving products supplied by VALSTEAM ADCA ENGINEERING S.A. is undertaken.
- The installation procedure is a critical stage in a life of any device and care should be taken to avoid damage to the sample cooler or equipment.
- ADCA sample coolers are designed to cool samples of boiler water or steam for analysis. They prevent steam flashing-off from hot pressurized liquid samples, which can be dangerous and will result in an incorrect water sample.

Note:

- Current regional safety regulations should be taken in to account and followed, while doing the installation and maintenance work.
- Handling, installation and maintenance work must be carried out by trained personnel. A supervisor must follow and check all activities.
- For the problems that cannot be solved with the help of these instructions, please contact the supplier or the manufacturer.
- The manufacturer reserves the right to change the design and material of this product without notice.

| LIMITING CONDITIONS | | | | | | | |
|-----------------------|---------------------|-----------------|---------------------|--------------------------|---------------------|-----------------|---------------------|
| SC332 - SC432 - SC532 | | | | SC332H - SC432H - SC532H | | | |
| BODY | | COIL | | BODY | | COIL | |
| Pressure bar | Related Temp. °C | Pressure bar | Related Temp. °C | Pressure bar | Related Temp. °C | Pressure bar | Related Temp. °C |
| 20 | 120 | 130 | 300 | 20 | 120 | 280 | 300 |
| | | 120 | 400 | | | 268 | 400 |
| | | 110 | 450 | | | 260 | 450 |
| | | 100 | 500 | | | 245 | 550 |

Minimum operating temperature : -10°C

Design code : AD - Merkblatt



ATTENTION

- If malfunction of any other equipment or system operation failure may result in a dangerous overpressure, over temperature or even vacuum condition, a safety device must be included in the system to prevent such situations.
- Do not touch the equipment without appropriate protection during working operation because it may conduct heat if the used fluid is at high temperature.
- Before starting maintenance be sure that the equipment is not pressurized or hot. Even if upstream and downstream isolating valves have been closed care should be taken since fluid under pressure may be trapped between them.
- The equipments must be used within the working temperature and pressure limits laid down for them, otherwise they may fail (refer to nameplate and/or IS- Information Sheet).
- Manual handling of products may present a risk of injury. You are advised to assess the risks considering the task, the individual, the load and the working environment.
- Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine ADCA replacement parts.
- Do not remove the nameplate attached to the equipment. Serial number and other useful information is stamped on it.
- During the assembly work, apply protective measures against dirt.
- Correct installation of the equipment is full responsibility of the contractor.
- Sample coolers are designed to be applied in places protected from exposure to weather.
- We recommend special constructions or protective measures for applications on the outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapors, etc).

TRANSPORT AND STORAGE



ATTENTION

- Handling and lifting of materials should be made with adequate equipments.
- The sample coolers and equipments should be protected from impacts and forces during transportation and storage.
- The manufacturer doesn't assume the responsibility of damaged equipments due to inappropriate handling during the transportation and storage.

INSTALLATION



ATTENTION

- Account for over pressure conditions, according with the local laws or standards.
- For the problems that cannot be solved with the help of these instructions, please contact the supplier or the manufacturer.

Installation area requirements:

- The installation area should have easy access and provide enough space for maintenance and removing operations.
- The pipework before and after the sample cooler, must be sized in order to avoid that the max flow speed recommended, for the fluid in question, is exceeded.
- In order to allow the installation and maintenance work without emptying the system, stop valves should be installed upstream of the sample cooler water and steam supply.

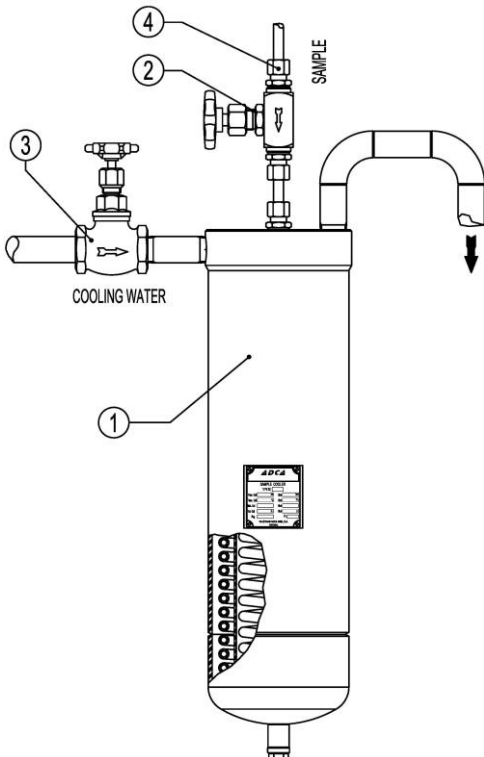
Procedure:

- Prior to install check that the product is suitable for the intended application: materials and pressure/temperature ratings.
- Before installing remove, plastic covers placed on flanges or connection ends. The equipment has an arrow or Inlet/Outlet designations. Be sure that it will be installed on the appropriate direction.
- Take care with jointing material to ensure that none may be permitted to block or enter the sample cooler.
- Sample coolers are recommended to be fitted with the centre line of the cooler in a vertical position to ensure that the best results are obtained.
- Stop valves are necessary on the cooling water and sample inlet.
- The outlet cooling water should be piped in to a drain, and be free of obstructions or isolation valves.
- The sample cooler pipe work should be properly supported and free from strain and it should not be subjected to undue surges of pressure. The start-up condition should be considered.



- **If these procedures are not fulfilled, it could cause deformations or an eventual material rupture of the equipment.**

Typical installation:



| Pos. | Designation |
|------|---|
| 1 | Sample Cooler |
| 2 | * Sample inlet valve NV-400 |
| 3 | Cooling water inlet valve ADCA GV32B |
| 4 | **Compression fitting 1/4"x10 (2x) Cl. S (316Ti / 1.4571) |

* Check operating conditions, see catalogue

**Limited to max.400 °C

START UP



ATTENTION

- Current regional safety regulations should be taken in to account and followed.
- Protective insulation and warning notice may be required.
- Until the start up of an existing or a new plant, the following must be checked:
 - All works are completed.
 - The sample cooler is correctly installed.
 - All the necessary safety devices have been installed.
- **At start up, the presence of small particles in the fluid (dirt, scale, weld splatters, joint particles, remains of Teflon tape, etc) may cause an imperfect operation of the cooler. If this occurs, proceed to an accurate cleaning.**
- **Protection varnishes from pipes and flanges, fats, leftover paint, graphite, etc, should also be carefully cleaned, because they can be dissolved in the fluids (like steam) and contaminate the system.**
- During operation high flow noises can be heard.
- To avoid the risk of scalding, before open or close the sample inlet valve, make sure that the cooling water it's in the maximum flow.

Procedure to take boiler samples:

1. The cooling water stop valve (3) and the sample needle valve (2) should be closed.
2. Open the cooling water valve slowly in order to avoid water hammer damaging, until the input pressure reaches its limit.
3. Open the needle valve slowly so that flashing does not occur. Allow to run approximately 10 seconds until fresh sample is drawn.
4. Adjust the sample outlet temperature (if necessary), by regulating the sample needle valve and the water valve.
5. Make sure that there's an adequate equipment to collect the sample in place.
6. After the sample collection, close first the sample valve and then the water valve but only after a small period of time in order to condense or cool the remaining steam inside the sample cooler.

Periodical checking:

- 24 hours after the start up, it is recommended to check the pipe connections for leaks and retighten the connections if necessary.

MAINTENANCE

- The sample cooler does not need any specific type of maintenance. Regular inspection may be recommended by local authorities according to specific or general pipe and/or vessels assembly procedures.
- For further information refer to relevant SC brochure or consult our sales office.
- When reassembling make sure that all gasket faces are clean and always use a new gasket.

PRODUCTS RETURNING



ATTENTION

- Information regarding any hazards and precautions to be considered because of contaminating fluids and residues or mechanical damage that may represent a health, safety or environmental risk, must be provided in writing by the distributors and costumers when returning products to Valsteam ADCA engineering.
- Health and safety data sheets regarding substances identified as hazardous or potentially hazardous must be provided with the information mention above.



ATTENTION

- **LOSS OF WARRANTY:** Total or partial disregard of above instructions involves loss of any right to warranty.