



# INSTALLATION AND MAINTENANCE INSTRUCTIONS TH - THERMOSTATIC STEAM TRAPS TSS22-TH13A-TH21-TH32Y-TH35-TH36-TSW22

## 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 a steam trap and care should be taken to avoid damage to the trap or equipment.
- They give their maximum performance only when the equipment associated with them is correctly sized and installed in accordance with our recommendations.

## Note:

- Current regional safety regulations should be take 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 solve with the help of this 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	TSS22	TH13A	TH21/TH21SS	TH32Y-TH32Y/CK - TSW22-TH35/2 - TH35/3-TH36/4-TH36/6
PMO: Max. operating pressure	22 bar	13 bar	21 bar	22 bar
TMO: Max. operating temperature	250 °C	200 °C	250 °C	250 °C

\* For the Body limiting conditions, please refer to the relative catalogue.

MODEL	Max. Differential pressure
TH13A	13 bar
TH21/TH21SS	21 bar
TH32Y, TH32Y/CK, TSS22, TSW22, TH35/2, TH35/3, TH36/4, TH36/6	22 bar

**CE Marking:** This product has been designed for use on steam and water which are in Group 2 of the European PED-Pressure Equipment Directive in use and it complies with those requirements. The product fall within category SEP and must not be CE marked.



## 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.
- At start up, the presence of small particles in the fluid (dirt, scale, weld splatters, etc) may cause an imperfect closure of the seat. If this occurs, proceed to an accurate cleaning.
- 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 taking into account 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.
- When connecting flanges, the bolts should be mounted from the counter flange side with the hexagon nuts from the trap side and it must exist a perfect match between the connection flanges.
- Tighten flange connection bolts uniformly in a diagonal sequence.
- Correct installation of the equipment is full responsibility of the contractor.
- Steam traps 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.
- Do not damage the paint job. It protects against corrosion during transportation and storage.
- The steam traps 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.
- Steam traps must not be used with other purpose than the one they were built for (e.g. climbing aids or as connecting points for lifting gear).
- For the problems that cannot be solve with the help of this 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.
- In order to allow installation and maintenance work without emptying the system, stop valves should be installed upstream and downstream of the steam trap.
- **If the system cannot be stopped for maintenance it is recommended that isolating valves are installed upstream and downstream of the steam trap together with a by-pass manual regulating valve. The process can be then controlled manually during the steam trap maintenance. The by-pass must be kept close during the normal operation.**
- The installation area should have the necessary firing system to prevent damage of the equipment due to over temperature/pressure cause by fire.

### 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 trap.
- In case of using Teflon tape (for screwed connections), avoid rolling it till the edge, because it can get cut and migrate to the trap interior, blocking or causing a defective sealing.
- Install the steam trap in the point of the system, where the condensate tends to collect.
- An ADCA pipeline strainer should be installed upstream of the trap to protect from dirt which could damage the steam trap or cause mal-functioning. The strainer must be installed with the sieve sideways, if the medium is steam, to prevent the collection of condensate.
- Do not over-tighten clamps because that can damage the gasket (if applicable).
- External stresses that may be induced by the system due to pipe expansion, etc, can affect this product. The necessary precautions are recommended during the systems design and equipment assembly.
- The steam trap pipework 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.

## START UP



### ATTENTION

- Current regional safety regulations should be taken into 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 steam trap 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 closure of the seat. If this occurs, proceed to an accurate cleaning.**

## Periodical checking:

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

## MAINTENANCE

- We recommend the steam traps to be serviced as necessary. Steam traps should be checked periodically (at least yearly), to verify if they are operating correctly and to clean the internal parts and strainer screen (if any).
- When reassembling make sure that all gasket faces are clean and always use a new gasket. Tighten cover bolts uniformly in a diagonal sequence.
- Maintenance should proceed as follows:
  1. Isolation valves should be closed and the pressure and temperature must be atmospheric.
  2. Remove the type of connections used.
  3. Execute the maintenance work.
  4. Replace and tighten the connections. (Don't forget to substitute the gasket).
  5. Consider the start up conditions.

## TROUBLESHOOTING



### ATTENTION

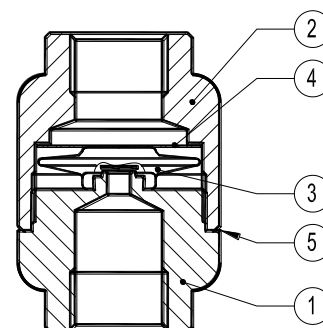
- If the malfunctions cannot be solved with the help of the following chart, please consult the manufacturer.
- Some of these faults may only occur in some models.

**TROUBLE SHOOTING CHART**

FAULT	POSSIBLE REASON	SOLUTION
Continuous steam discharge	Damaged seat. Residues deposit limiting the thermostatic element movement. Damaged thermostatic element due to superheated steam.	Substitute seat. Clean the thermostatic element and the trap. Substitute the thermostatic element.
The condensate isn't discharged	Obstructed strainer	Proceed to an accurate clean and identify the possible reason of contamination.

**SPARE PARTS**
**TSS22**

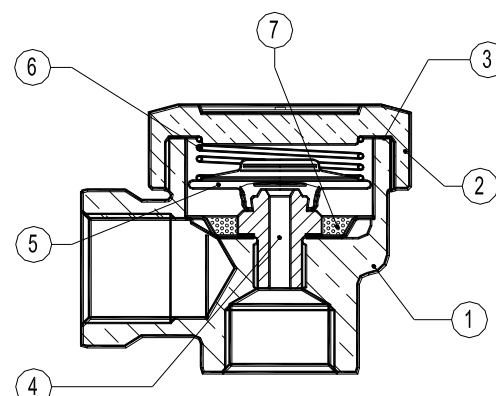
CODE	DESIGNATION	TRAP SIZE DN	POS.NR.	QTY.
A.94.6100.005	Capsule 5° & strainer	1/2" - 1"	3, 4	1 set
A.94.6100.010	Capsule 10° & strainer	1/2" - 1"	3, 4	1 set
A.94.6100.015	Strainer screen	1/2" - 1"	4	1 set
A.94.6100.115	Cover gasket	1/2" - 1"	5	1 set


**TSS22**
**Recommended tightening torques**

POS.NR.	TRAP SIZE DN	Nm
1-2	3/8" - 1"	45-55

**Remarks: Tighten cover bolts uniformly.**
**TH13A**

CODE	DESIGNATION	TRAP SIZE DN	POS.NR.	QTY.
A.94.2100.005	Capsule 5° & gasket	1/2"	3, 5	1 set
A.94.2100.010	Capsule 10° & gasket	1/2"	3, 5	1 set
A.94.2100.115	Seat & gasket	1/2"	3, 4	1 set
A.94.2100.215	Cover gasket	1/2"	3	1 set

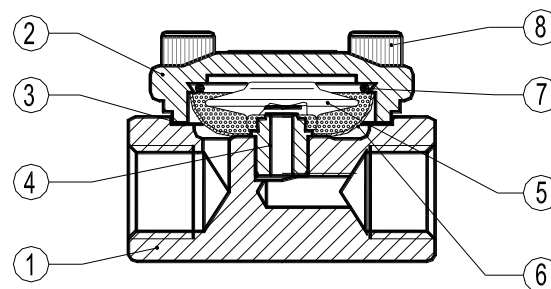

**TH13A**
**Recommended tightening torques**

POS.NR.	TRAP SIZE DN	Nm
2	1/2"	45
4	1/2"	35

**Remarks: Tighten cover bolts uniformly.**

**TH21**

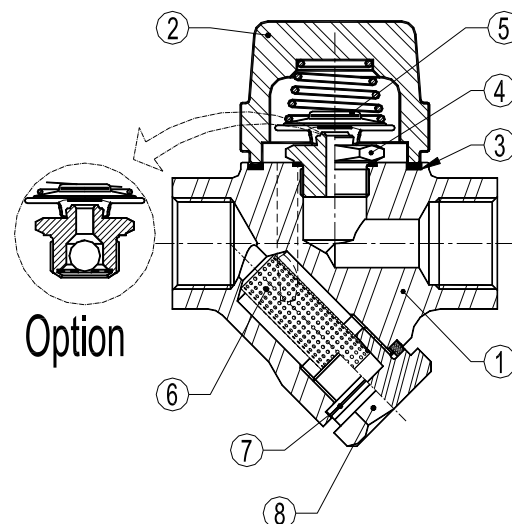
CODE	DESIGNATION	TRAP SIZE DN	POS.NR.	QTY.
A.94.4000.005	Capsule 5° & gasket	1/2"	3, 5	1 set
A.94.4000.010	Capsule 10° & gasket	1/2"	3, 5	1 set
A.94.4000.015	Strainer screen & gasket	1/2"	6, 3	1 set
A.94.4000.015	Cover gasket	1/2"	3	1 set


**TH21**
**Recommended tightening torques**

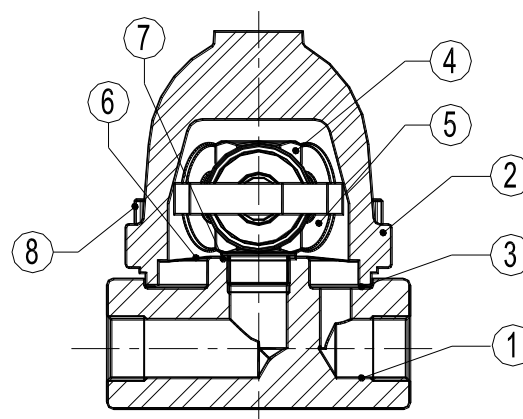
POS.NR.	TRAP SIZE DN	Nm
8	1/2"	20

**Remarks: Tighten cover bolts uniformly.**
**TH32Y - TH35**

CODE	DESIGNATION	TRAP SIZE DN	POS.NR.	QTY.
A.94.4810.005	Capsule 5° & gasket	1/2" - 1"	3, 5	1 set
A.94.4810.010	Capsule 10° & gasket	1/2" - 1"	3, 5	1 set
A.94.4810.015	Seat & gasket	1/2" - 1"	4, 3	1 set
A.94.4810.115	Strainer & gasket	1/2" - 1"	6, 7	1 set
A.94.4810.215	Cover gasket	1/2" - 1"	3	1 set

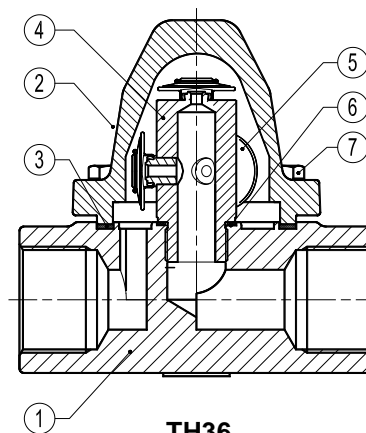

**TH32**
**Recommended tightening torques**

POS.NR.	TRAP SIZE DN	Nm
4	1/2" - 1"	120
8	1/2" - 1"	90
9	1/2" - 1"	30

**Remarks: Tighten cover bolts uniformly.**

**TH35**

TH36 PARTS		
POS. Nr.	DESIGNATION	MATERIAL
1	Body	ASTM A105 / 1.0432 (Equiv.P250GH)
2	Cover	ASTM A105 / 1.0432 (Equiv.P250GH)
3	* Gasket	St.St./Graphite
4	* Valve seat	AISI304 / 1.4301
5	*Thermostats	Stainless steel
6	* Seat gasket	Copper
7	Bolts	Steel 8.8

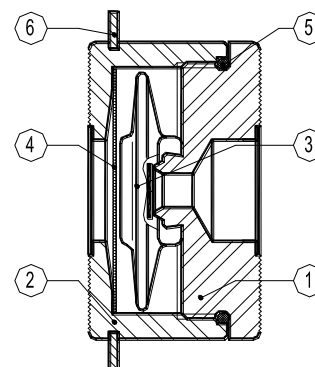
\* Available spare parts



**TH36**

TSW22 PARTS		
POS.Nr.	DESIGNATION	MATERIAL
1	Body	AISI304 / 1.4301
2	Cover	AISI304 / 1.4301
3	* Thermostatic element	Stainless steel
4	* Strainer screen	AISI304 / 1.4301
5	* Gasket	St.Steel / Graphite
6	Centering ring	AISI304 / 1.4301

\* Available spare parts



**TSW22**

## 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.