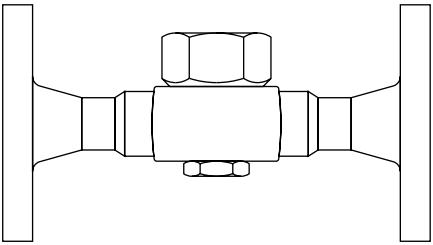
spirax sarco

TD1464
Thermodynamic Steam Trap
Installation and Maintenance Instructions



1. General safety information

Safe operation of the unit can only be guaranteed if it is properly installed, commissioned and maintained by a qualified person (see Section 11 of the attached Supplementary Safety Information) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

Isolation

Consider whether closing isolating valves will put any other part of the system or personnel at risk. Dangers might include; isolation of vents and protective devices or alarms. Ensure isolation valves are turned off in a gradual way to avoid system shocks.

Pressure

Before attempting any maintenance consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the product, this is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Disposal

The product is recyclable. No ecological hazard is anticipated with the disposal of this product providing due care is taken.

2. General product information

2.1 General description

The TD1464 is a maintainable, medium pressure thermodynamic steam trap available with socket weld or flanged connections complete with integral strainer. It is suitable for steam mains drainage.
Note: For further information see the following Technical Information Sheet, TI-P016-03, which gives full details of:- Materials, sizes and pipe connections, dimensions, weights, operating ranges and capacities.

2.2 Sizes and pipe connections

½", ¾" and 1" screwed BSP/NPT, socket weld ends and butt weld ends.
DN15 and DN20 flanged DIN PN64, ANSI 300 and ANSI 600.

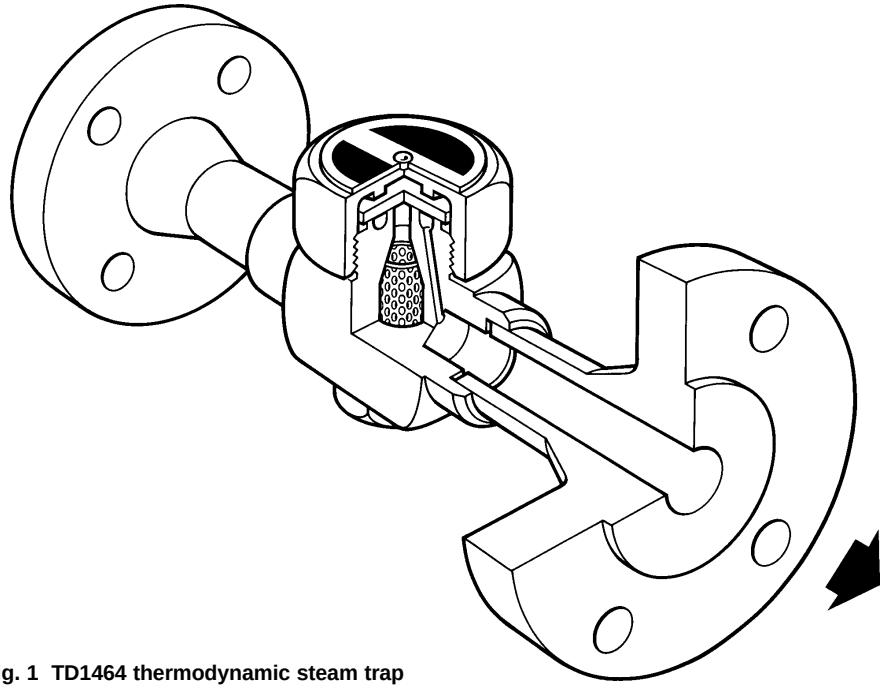
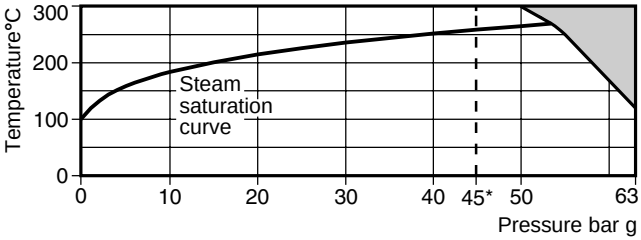


Fig. 1 TD1464 thermodynamic steam trap

2.3 Limiting conditions (ISO 6552)

Maximum body design conditions	PN63
PMA - Maximum allowable pressure	63 bar g (913 psi g)
TMA - Maximum allowable temperature	300°C (572°F)
PMO - Maximum operating pressure	45 bar g (652 psi g)
TMO - Maximum operating temperature	300°C (572°F)
PMOB - Maximum operating back pressure 50% of upstream pressure	
Minimum pressure for satisfactory operation	8 bar g (116 psi g)
Designed for a maximum cold hydraulic test pressure of:	95 bar g (1 377 psi g)

2.4 Operating range



The product must not be used in this region.

* PMO Maximum operating pressure recommended for saturated steam 45 bar g (652 psi g).
Note: Minimum pressure for satisfactory operation is 8 bar g (116 psi g)

3. Installation

Note: Before actioning any installation observe the 'Safety information' in Section 1.

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended installation.

3.1 Check materials, pressure and temperature and their maximum values. If the maximum operating limit of the product is lower than that of the system in which it is being fitted, ensure that a safety device is included in the system to prevent overpressurisation.

3.2 Determine the correct installation situation and the direction of fluid flow.

3.3 Remove protective covers from all connections.

3.4 Installing the thermodynamic steam trap:

- Always ensure the correct tools, safety procedures and protective equipment are used at all times.
- The trap should be installed in the horizontal plane with the name-plate on top, preferably preceded by a small drop leg.
- Welding of the trap into the pipeline must be done by the electric arc method and to be an approved procedure.
- Suitable isolation valves must be installed to allow safe maintenance and trap replacement.
- Consideration should be given to a suitable method for testing the correct operation of the trap. This may be a sight glass or a Spiratec system. Sight glasses must be positioned a minimum of 1 m (3 ft) downstream of any blast action traps.
- Where the trap discharges into a closed return system a non-return valve should be fitted downstream to prevent return flow.
- Always open isolation valves slowly until normal operating conditions are achieved - this will avoid system shocks.
- Check for leaks and correct operation.

Note: If the trap is to discharge to atmosphere ensure it is to a safe place, the discharging fluid may be at a temperature of 100°C (212°F).

4. Commissioning

After installation or maintenance ensure that the system is fully functioning. Carry out tests on any alarms or protective devices.

5. Operation

The thermodynamic steam trap will discharge condensate with a blast type action at a few degrees below steam saturation temperature, due care must be given to the site of the discharge.

6. Maintenance

Note: Before actioning any maintenance program observe the 'Safety information' in Section 1.

6.1 How to replace the disc:

- Unscrew the cap using a spanner. Do not use Stillsons or a wrench of similar type which may cause distortion of the cap.
- If the disc and body seating surfaces are only slightly worn they can be refaced by lapping individually on a flat surface such as the surface plate. A figure of eight motion and a little griding compound such as Carborundum Co's Compund I.F. gives the best results. If the wear is too great to be rectified by simple lapping, the seating faces on the body must be ground flat and then lapped and the disc replaced with a new one. The total amount of metal removed in this way should not exceed 0.25 mm.
- When reassembling, the disc is normally placed in position with the grooved side in contact with the body seating face.
- Screw on the cap; no gasket is required, but a fine smear of Molybdenum Disuphide grease should be applied to the threads.
- Retighten the top cap to the recommended torque (see Table 1).

6.2 How to clean or replace the strainer:

- Unscrew the strainer cap using a spanner. Do not withdraw the screen and clean, or if damaged, replace with a new one.
- To reassembly, insert the screen in the cap and replace the gasket with a new one.
- Screw the cap into place.
- A fine smear of Molybdenum Disuphide grease should be applied to the threads.
- Retighten the cap to the recommended torque (see Table 1).

Table 1 Recommended tightening torques

Item No.	 or mm 	N m (lbf ft)
2 Cap	46 A/F	200 - 220 (147 - 161)
4 Strainer cap	32 A/F	250 - 275 (184 - 202)

7. Spare parts

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

Available spares

Disc (packet of 3)	**3**
Strainer screen	**5**

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of trap.
Example: 1 - Strainer screen for ½" Spirax Sarco TD1464 thermodynamic steam trap.

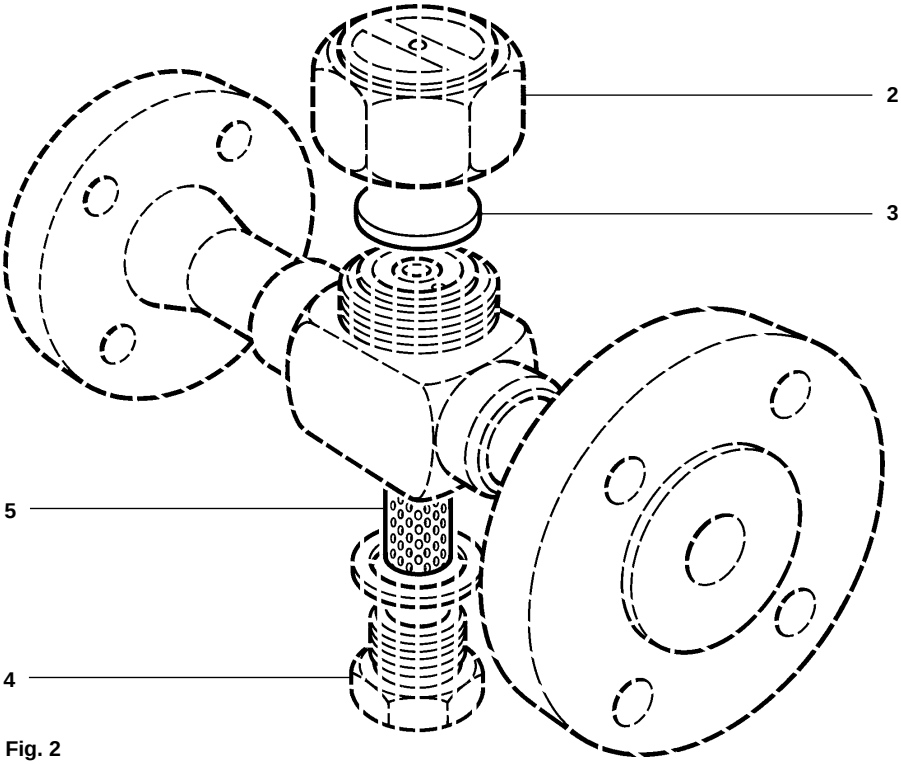


Fig. 2