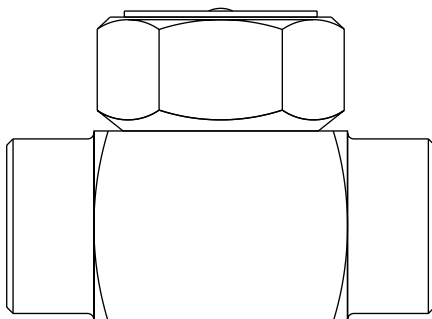


BTD52L

Thermodynamic Steam Trap
Installation and Maintenance Instructions



1. *General
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3. *Installation*
4. *Commissioning*
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1. General safety information

Safe operation of these units can only be guaranteed if they are 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) if required.

Disposal

These products are recyclable. No ecological hazard is anticipated with the disposal of these products providing due care is taken.

2. General product information

2.1 General description

The BTD52L is manufactured from 316L stainless steel specifically for mains drainage applications in clean steam systems.

Optional extras

An insulating cover is available at extra cost to prevent the trap being unduly influenced by excessive heat loss when subjected to low ambient temperature, wind and rain etc.

Note: For additional information see Technical Information Sheet TI-P181-01.

2.2 Sizes and pipe connections

1/4", 3/8", 1/2" screwed BSP or NPT.

1/2" O/D x 16 swg (0.065") wall thickness tube end.

DN 11850 (Series 1) tube ends

12 mm O/D x 1.0 mm wall thickness (DN10)

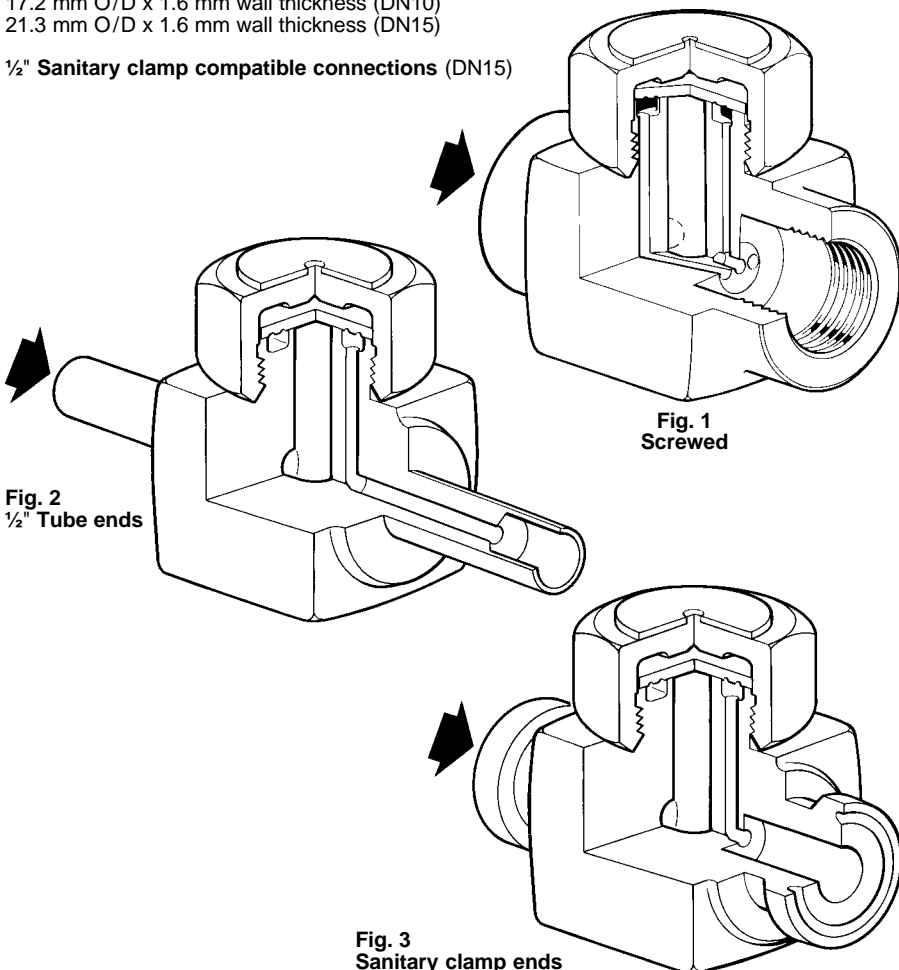
18 mm O/D x 1.0 mm wall thickness (DN15)

ISO 1127 (Series 1) tube ends

17.2 mm O/D x 1.6 mm wall thickness (DN10)

21.3 mm O/D x 1.6 mm wall thickness (DN15)

1/2" Sanitary clamp compatible connections (DN15)

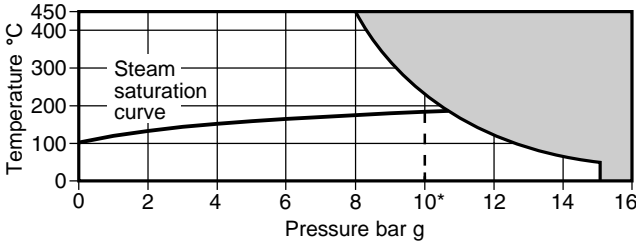


2.3 Limiting conditions

Body design conditions		PN16
PMA - Maximum allowable pressure	16 bar g	(232 psi g)
TMA - Maximum allowable temperature	450°C	(842°F)
PMO - Maximum operating pressure	10 bar g	(145 psi g)
TMO - Maximum operating temperature	450°C	(842°F)
Designed for a maximum cold hydraulic test pressure of:	24 bar g	(348 psi g)

Note: Minimum pressure for satisfactory operation is 0.25 bar g (3.6 psi g).

2.4 Operating range



* PMO Maximum operating pressure recommended for steam service.

PMOB Maximum operating back pressure is 80% of the upstream pressure.

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** Always ensure the correct tools, safety procedures and protective equipment are used at all times.
- 3.5** The trap should be installed in the horizontal plane, preferably preceded by a small drop leg. For freeze proof installation, or where horizontal fitting is not possible. The BT52L may be installed vertically, but the service life may be affected.
- 3.6** Suitable isolation valves must be installed to allow for safe maintenance and trap replacement.
- 3.7** Where the trap discharges into a closed return system, a non-return valve should be fitted downstream to prevent return flow. Remove all packaging and protective covers and ensure all connections ports are clear from obstruction.
- 3.8** Always open isolation valves slowly until normal operating conditions are achieved - this will avoid system shocks. Check for leaks and correct installation.

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 functional. 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 programme observe the 'Safety information' in Section 1.

6.1 General maintenance

Before undertaking any maintenance on the trap it must be isolated from both the supply line and return line and any pressure allowed to safely normalise to the atmosphere. The trap should then be allowed to cool. When reassembling, ensure that all joint faces are clean.



6.2 How to service:

- Note; refer to Figure 4, page 7, for part number location.
- Remove the insulating cover (4) if fitted.
- Unscrew the cap (2) using a spanner. **Do not use** Stillsons or a wrench of similar type which may cause distortion of the cap.
- If the disc (3) and body seating surfaces (1) 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 grinding compound such as Carborundum Co's Compound 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 (0.01").
- When reassembling the disc (3) is normally placed in position with the grooved side in contact with the body seating face.
- Screw on the cap (2); no gasket is required but a fine smear of Molybdenum Disulphide grease should be applied to the threads. Tighten the cap (2) to the recommended tightening torque (see Table 1).

Warning: When torquing or untorquing the cap (2), some support should be given to the body of the trap to prevent over stressing and/or distortion of the end connections and system pipework.

Table 1 Recommended tightening torques

Warning: When torquing or untorquing the cap (2), some support should be given to the body of the trap to prevent over stressing and/or distortion of the end connections and system pipework.

Item	Part	 or mm		N m	(lbf ft)
2	Cap	36 A/F		115 - 130	(85 - 96)

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	3
Insulating cover	4

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 - Disc for the Spirax Sarco ½" BSP Spirax Sarco BT52L thermodynamic steam trap.

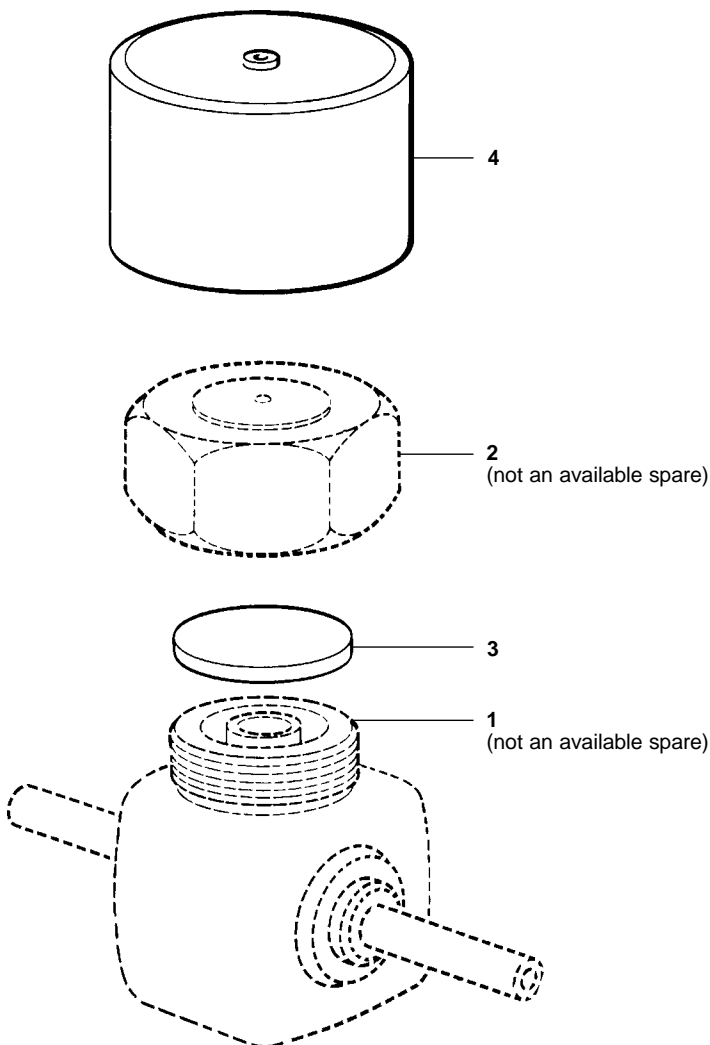


Fig. 4

