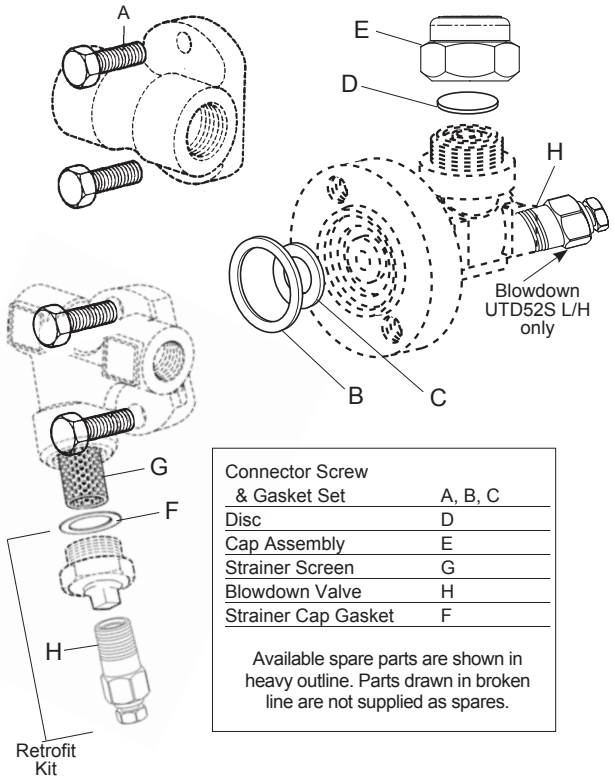
Operation of Blowdown Valve (if supplied)

Hand protection is recommended before discharging the blowdown valve.

To blowdown the strainer or depressurize the trap apply a 1/2" wrench to the flats on the valve screw. Rotate the valve screw counter clockwise (about two to three complete revolutions) to release the contents of the strainer. **Note: when opening blowdown valve screw, make sure that the blowdown valve body does not turn at all. If the blowdown valve turns, it must be held in place with a second wrench.** The valve will discharge from the side of the blowdown valve 90 degrees from the valve screw downward away from the operator. When closing the blowdown valve do not use excessive force to close the valve as it can cause damage to the sealing surfaces. If the valve does not shutoff with minimal force reopen and close the valve again.



Connector Screw & Gasket Set	A, B, C
Disc	D
Cap Assembly	E
Strainer Screen	G
Blowdown Valve	H
Strainer Cap Gasket	F

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

To Clean or Replace the Strainer

Complete isolation of the trap from both supply and return line pressure is required before any service can be performed.

Unscrew the strainer cap, withdraw the screen and clean. If the screen shows any signs of damage, replace it immediately.

To re-assemble, insert the screen in the cap, then screw the cap into place. Place gasket over threads, a fine smear of Molybdenum Disulphide grease should be applied to the threads.

Recommended Tightening Torques	
Cap - UTD52H all versions	140 ft-lb (190 Nm)
Cap - UTD52L all versions	70 ft-lb (95 Nm)
Strainer Cap	125-140 ft-lb (170-190 Nm)
Blowdown Valve	68 ft-lb minimum turn until blowdown hole is aligned properly

For additional technical information, contact:
Spirax Sarco Applications Engineering Department

spirax sarco

Spirax Sarco, Inc. • 1150 Northpoint Blvd. • Blythewood, SC 29016
Phone 1-800-883-4411 • www.spiraxsarco.com/global/us

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INSTALLATION AND MAINTENANCE INSTRUCTIONS

IM-2-5161-US **August 2017**

Thermodynamic Steam Trap UTD52 Series with Universal Connectors

Description & Operation

The Spirax Sarco UTD52L and UTD52H are Thermodynamic disc-type steam traps. The trap cycles open and closed to discharge condensate close to steam temperature and closes tight between discharges.

The disc, which is the only moving part, rises and falls in response to dynamic forces produced by the partial re-evaporation (flashing) of hot condensate. Cool condensate, air and other non-condensible gases enter the trap through the central orifice, lift the disc, and are discharged through the three outlet orifices. When the condensate approaches steam temperature, a portion of it flashes as it enters the trap. The flash steam passes at high velocity over the underside of the disc and collects in the control chamber above. The resulting pressure imbalance forces the disc downward onto the seating surfaces, stopping the flow. The trap remains tightly closed until the loss of heat from cooler incoming condensate lowers the control chamber pressure, allowing the inlet pressure to raise the disc and repeat the cycle.

The connector is permanently installed in the pipeline, which may be at any angle. The trap can be rotated through 360˚ to orient it properly, and it can easily be removed for servicing or replacement.

The UTD52 Series steam traps & swivel connector will be supplied in two parts ordered separately.

The UTD52L, UTD52H and UTD52L-HP consists of a trap with gaskets fitted and two connector bolts.

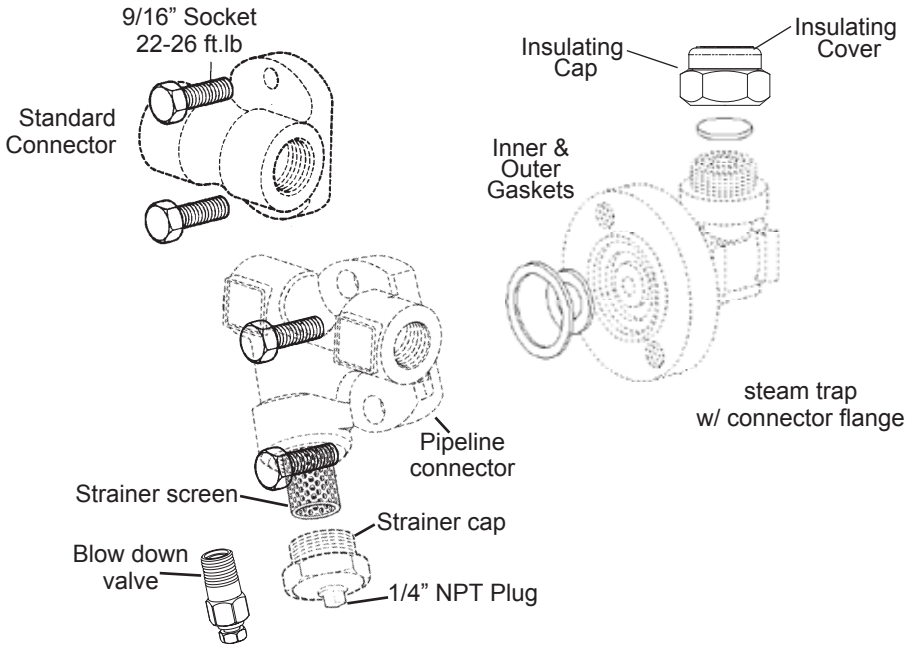
The UTD52SL and UTD52SH consists of a trap with gaskets fitted, blowdown valve and two connector screws.

Limiting Operating Conditions:

Max. Operating Pressure (PMO)	450 psig *(31 barg) Standard* 600 psig *(42 barg)* UTD52L-HP
Max. Operating Temperature	750˚F *(400˚C)*
Pressure Range	3.5 to 450 psig UTD52L, UTD52H, UTD52SL, UTD52SH 300 to 600 psig UTD52L-HP

Maximum back pressure should not exceed 80% of the upstream pressure

The trap and connector may be subjected to a cold hydraulic test pressure of 1080 psig *(74 barg)*.



Installation

Full-flow isolating valves should be installed so as to permit the isolation of the connector from both supply and return line pressure.

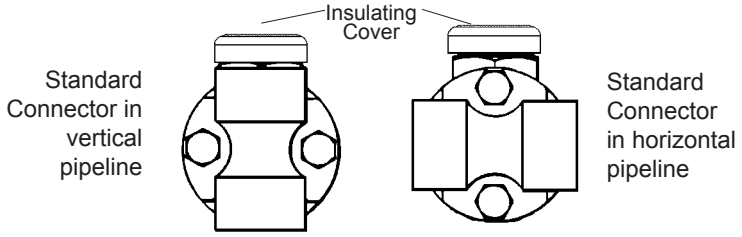
It is recommended that a Y-pattern strainer be used to protect the trap. The strainer connector includes this strainer. If the standard connector is used, a strainer should be fitted between the upstream isolating valve and the connector.

The pipeline connector must be installed with the mating flange face in a vertical plane. The flow direction (as indicated by the arrow on the connector) must be observed.

When strainer connector is used in a vertical position, blowdown valve must be rotated 180 degrees, so blowdown discharges downward. Rotate blowdown valve clockwise (tightening) to adjust for vertical piping.

Before the steam trap is attached to the connector, both the inner and outer gaskets must be properly positioned in their grooves. The trap is supplied with the gaskets in place.

Using a suitable anti-seize compound on the two bolts, the trap should be loosely attached to the connector. The trap should then be rotated so that it is in a horizontal position with the cap upward. Using a 9/16” socket, the bolts should be evenly torqued to 22-26 ft-lbs.



Installating cover may rotate and does not affect trap operation.
Do not hammer the insulating cover as damage to ceramic and cover may occur.

As supplied from Spirax Sarco, the trap comes with (2) 3/8”-16 UNC-2A 1-1/4” long hex head cap screws ASTM-A193 Grade B7, nickel plated. If the trap is to be installed on a pipeline connector not manufactured by Spirax Sarco, cap screws with the above specifications but long enough to completely engage the steam trap connector flange must be used.

The trap is now ready for service. No priming is required.
To operate blowdown valve open counter clockwise with 1/2” wrench.

Trouble Shooting

The trap normally cycles on and off. The cycle rate depends on the condensate load and ambient conditions, and may vary from less than one cycle/minute to one cycle every few seconds. The click of the disc as the trap cycles can usually be clearly heard. If the disc can be heard clicking open and closed, the trap is probably working correctly.

If the disc is rapid cycling or “machine gunning,” either the trap is worn or a piece of dirt or scale is preventing the disc from seating properly.

A downstream pipe connection may be opened to observe the trap discharge. Because condensate is discharged almost at steam temperature, a portion of it will re-evaporate (or flash) as it leaves the trap. The discharge will therefore be a high velocity mixture of flash steam and liquid condensate which may be mistaken for live steam. Similarly, some of the condensate remaining in the outlet passages when the trap closes may re-evaporate and give the appearance of a faulty trap. If the trap cycles cleanly open and closed, it is working properly.

Maintenance

The connector must be isolated from both supply and return line pressure before carrying out any maintenance work or removal of the trap. If supplied with blowdown valve or trap station, open blowdown valve to depressurize. With no blowdown valve, allow unit to fully cool and open blowdown in external pipeline.

(No attempt should ever be made to loosen or remove the cap while the trap is fitted to the pipeline connector.) If necessary, this should be done in the shop with the trap body in a vice.

Unbolting the two connecting screws will allow the trap to be removed. Once the connector flange face has been cleaned with a soft scraper, a replacement trap can be installed. (See installation)

The removed trap may be disassembled for inspection and cleaning. A monkey wrench or other smooth jaw wrench should be used to remove the cap. Do not use wrench on insulation cover (only on flats of the cap) Do not hammer insulation cover. Pipe wrenches can distort the cap and damage the body seating surfaces. The disc and seating surfaces can be cleaned with a suitable solvent. A worn disc can be replaced, and minor seat wear can sometimes be corrected by careful lapping on a perfectly flat lapping plate.

The disc is replaced with the grooved side down. A small amount of high-temperature anti-seize compound should be applied to the cap threads on the body, and the cap tightened to a torque of 70 ft•lb (140 ft•lb for UTD52H).

If the trap is to be re-installed, new gaskets should be used. The old gaskets can be removed by using a small screwdriver to spring them from their grooves, being careful not to damage the spirally-grooved gasket faces, which should be cleaned with a soft scraper. The staking on the metal lips should be carefully straightened. New gaskets can now be installed and staked in position.

The trap can now be re-installed on the connector. (see installation)