Thermodynamic steam traps

for pressures up to 42 bar

spirax sarco

The only thermodynamic steam trap with over 40 years of experience

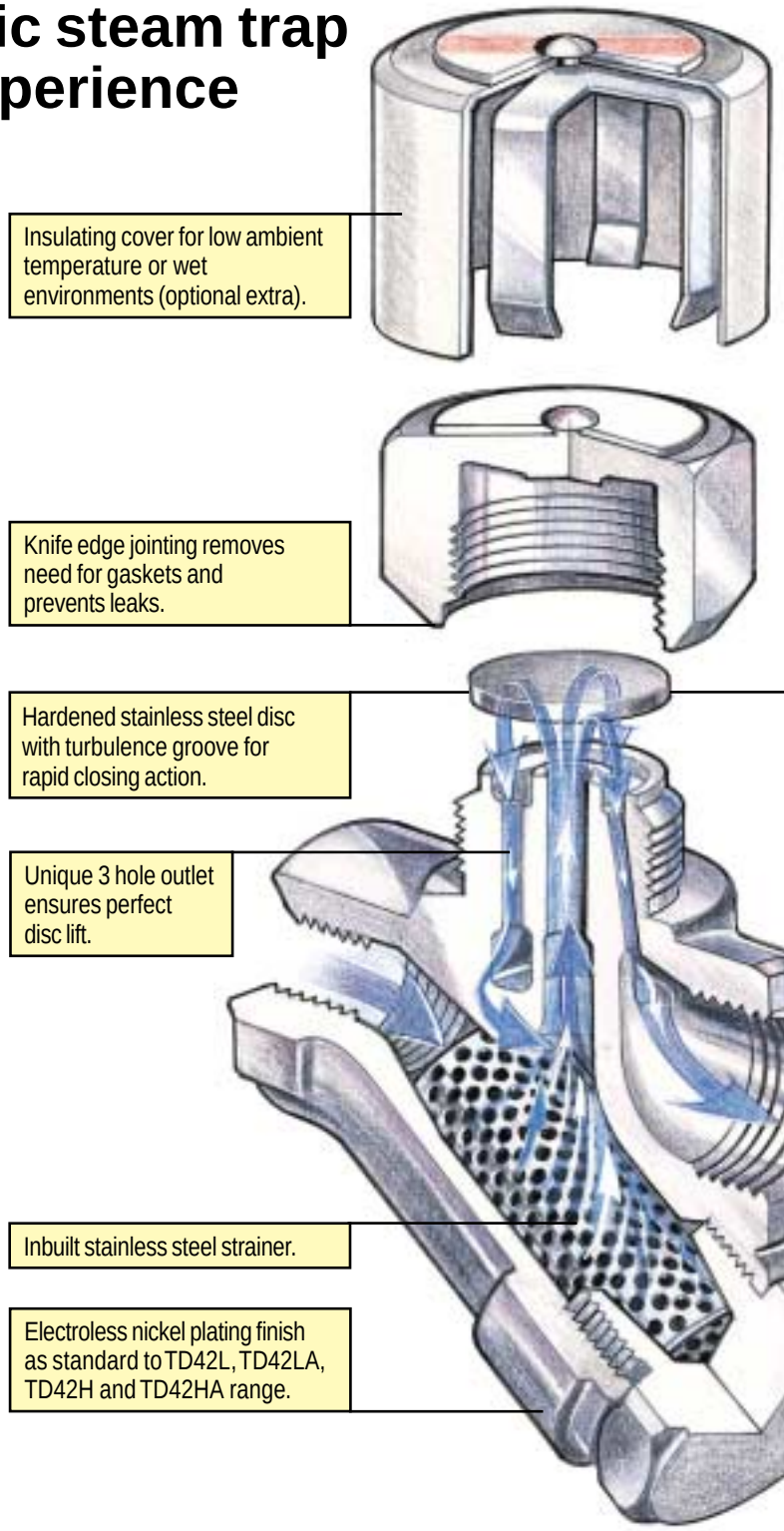
The Spirax Sarco TD is the product of experience. First launched in 1950 the TD has become the most advanced thermodynamic steam trap available.

Constant design improvements have made today's TD an extremely robust steam trap, ideally suited to the rigorous demands of any steam system.

Unique amongst all thermodynamic steam traps is the 3 hole condensate outlet arrangement designed to ensure perfect lift of the stainless steel disc. Such attention to detail ensures complete shut-off at all pressures and uniform flow over all seating faces for extended product life, removing the unnecessary complication for renewable seats.

Having the options of an anti-air-binding disc for start-up conditions; blowdown valve and insulating cover, the TD range is adaptable to all applications where thermodynamic traps are recommended and instantaneous removal of condensate is required.

With over 3½ million Spirax Sarco TD traps manufactured and supplied to over 100 000 customers, the Spirax Sarco TD has become the most widely used thermodynamic steam trap in the world today.

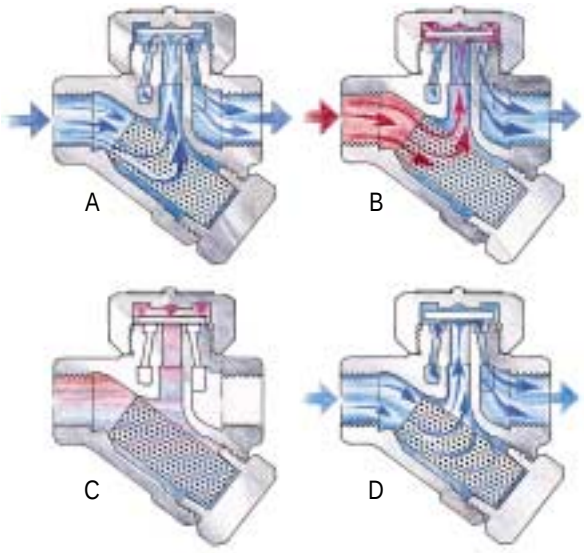


Options

	¼"	⅜"	½"	¾"	1"	ENP finish	Insulating cover	Blowdown valve		¼"	⅜"	½"	¾"	1"	ENP finish	Insulating cover	Blowdown valve
TD42L	-	●	●	●	●	●	●	●	TD3-3LC	-	-	●	-	-	-	●	●
TD42LA	-	●	●	●	●	●	●	●	TD3-3LCA	-	-	●	-	-	-	●	●
TD42H	-	-	●	●	●	●	●	●	TD3-3	-	●	●	●	-	-	●	●
TD42HA	-	-	●	-	-	●	●	●	TD3-3A	-	●	●	-	-	-	●	●
TD42S2LC	-	-	●	-	-	-	●	●	TD259	●	-	-	-	-	-	-	-
TD42S2	-	-	●	●	-	-	●	●	TD259A	●	-	-	-	-	-	-	-
TD32FLC	-	-	●	-	-	-	●	-	TD52LC	-	●	●	-	-	-	●	-
TD32FLCA	-	-	●	-	-	-	●	-	TD52LCA	-	●	●	-	-	-	●	-
TD32F	-	-	●	●	●	-	●	-	TD52	-	-	●	●	●	-	●	-
TD32FA	-	-	●	-	-	-	●	-	TD52A	-	-	●	-	-	-	●	-

For further Thermodynamic Steam Trap options see sales brochures: 'High pressure thermodynamic steam traps' for pressures up to 120 bar and 'Swivel connector steam traps'.

How it works



On start-up, incoming pressure raises the disc and cooled condensate, plus air, is immediately discharged (A). Hot condensate flowing through the trap releases flash steam. High velocity creates a low pressure area under the disc and draws it towards the seat (B). At the same time there is a pressure build-up of flash steam in the chamber above the disc which forces it down against the pressure of the incoming condensate until it seats on the inner ring and closes the inlet. The disc also seats on the outer ring and traps pressure in the chamber (C).

Pressure in the chamber is decreased by condensation of the flash steam and the disc is raised. The cycle is then repeated (D).

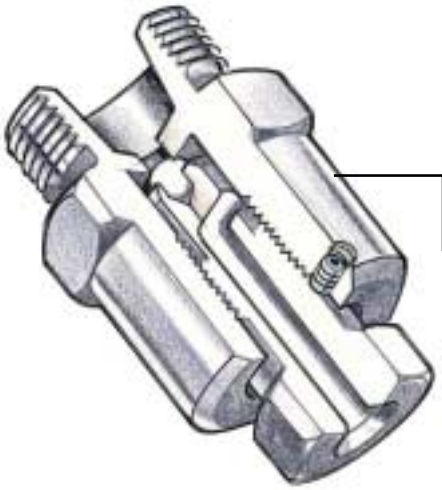
Anti-air-binding disc

Air release option with inbuilt 'click clack' thermostat for start-up conditions.
Traps with 'A' suffix have anti-air-binding discs.

The disc is assembled from 3 separate layers. At start-up the bimetallic disc allows air to pass from the control chamber through the hole in the upper layer, through the 2 holes in the bimetallic disc and through the hole in the lower layer to the trap outlet.

After start-up the bimetallic disc inverts and closes off the hole in the lower layer thereby preventing steam loss.

Connections to suit every application:
- Screwed
- Flanged
- Socket weld
- Butt weld

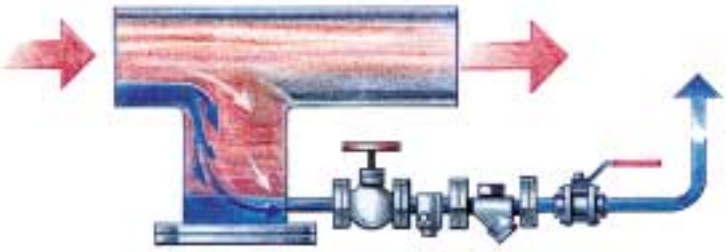


Blowdown valve for on-line cleaning (optional extra).

User benefits

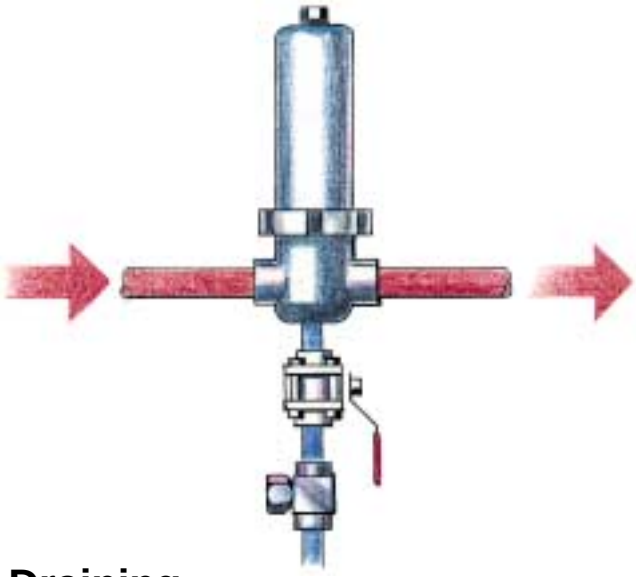
- Compact and light weight, reducing installation costs.
- Unique knife edge jointing removes the need for gaskets and guarantees protection from expensive leaks.
- Just one moving part, a stainless steel disc, ensures reliable operation and minimal maintenance.
- Positive discharge with clean tight shut-off. No back-up of condensate ensures maximum plant efficiency.
- One trap covers all operating pressures making selection and replacement simple.
- Robust construction to guarantee long life against superheat, waterhammer, freezing and vibration.
- Disc gives audible click when closing for simple on-line performance checks.
- Rugged design for a trouble free long life.
- Can be installed in both horizontal and vertical positions reducing installation problems.
- Spirax Sarco's guarantee of technical support, knowledge and service.

Typical applications



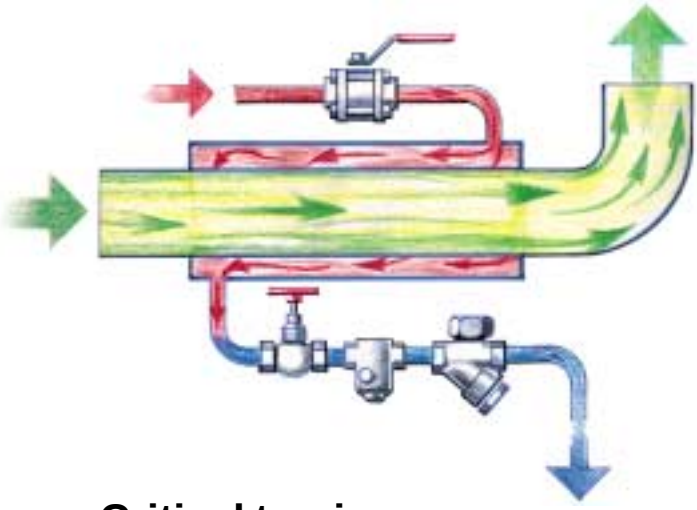
Condensate removal from steam mains

Instant removal of condensate prevents waterhammer and improves steam quality.



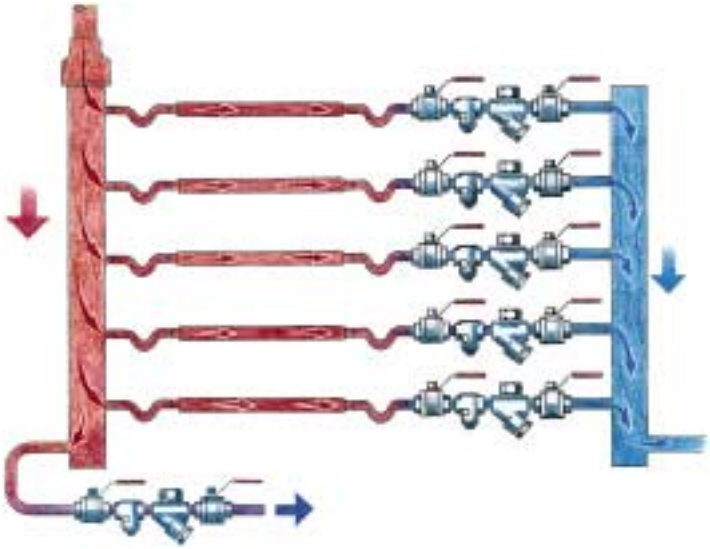
Draining high efficiency filters

Rapid removal of condensate ensures optimum filter efficiency.



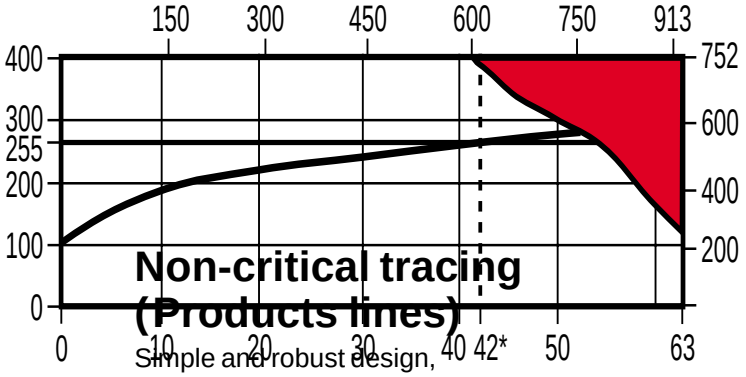
Critical tracing (Jacketed product lines)

Condensate is removed as it is formed, ensuring maximum heat transfer to the product eliminating the danger of solidification.



Condensate removal from platten presses

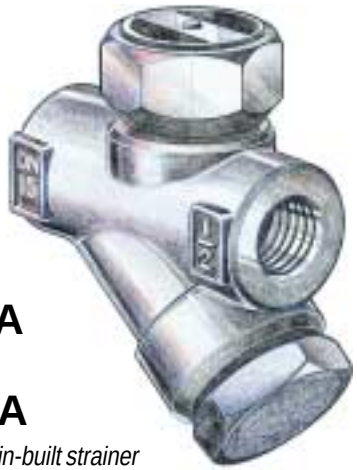
Fast efficient removal of condensate ensures even platten temperature with reduced risk of product wastage.



Non-critical tracing (Products lines)

Simple and robust design, ideal for harsh outdoor conditions.

Spiratec steam trap leak detection chambers have been shown together with various isolating valve combinations to illustrate the complementary range of Spirax Sarco products.



TD42L
TD42LA
TD42H
TD42HA

Screwed with in-built strainer

TD42S2
TD42S2LC

Socket weld with in-built strainer

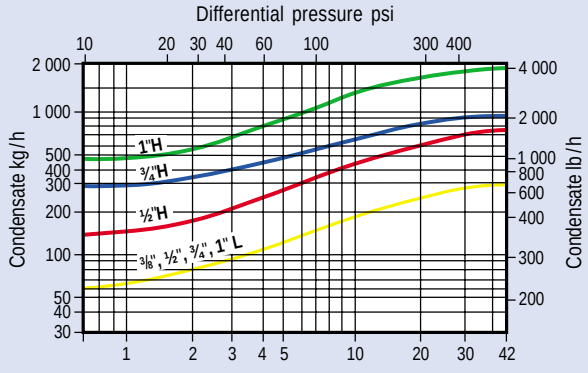
Sizes and pipe connections

⅜", ½", ¾" and 1" screwed BSP or NPT.

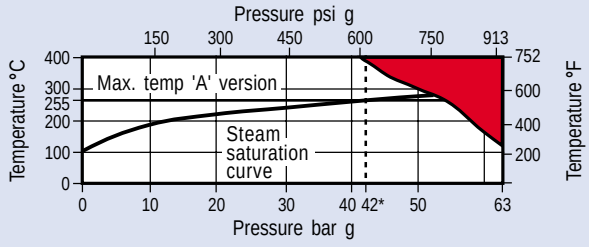
Materials

Body	Stainless steel (with ENP)	ASTM A743 Gr. CA 40F
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45
Strainer screen	Stainless steel	ASTM A240 316L
Strainer cap	Stainless steel	AISI 416

Capacities



Operating range



The product must not be used in red area.
*PMO - Maximum operating pressure (recommended).
Note: Minimum pressure for satisfactory operation is 0.25 bar g (TD42L & TD42H), 0.8 bar g (TD42LA & TD42HA).
PMOB - Maximum operating back pressure is 80% of upstream pressure.

Limiting conditions (ISO 6552)

Body design conditions PN63
PMA – Maximum allowable pressure 63 bar g
TMA – Maximum allowable temperature 400°C
Cold hydraulic test pressure 95 bar g

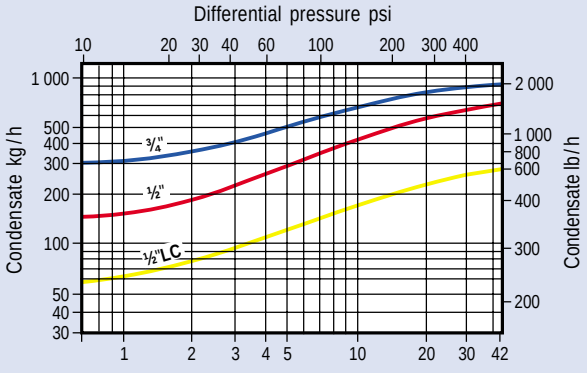
Sizes and pipe connections

½" LC, ½" and ¾" socket weld ends to BS 3799 class 3000

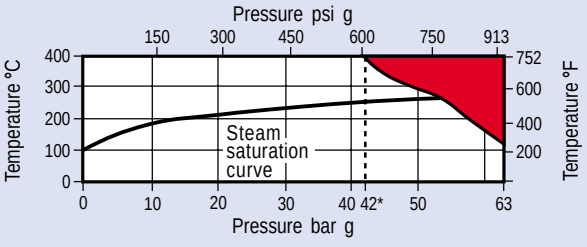
Materials

Body	Carbon steel	ASTM A216 Gr. WCB
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45
Strainer screen	Stainless steel	ASTM A240 316L
Strainer cap	Stainless steel	AISI 416

Capacities



Operating range



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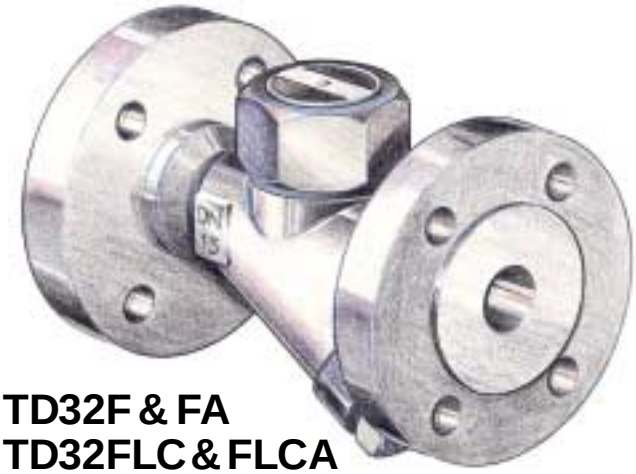
Limiting conditions (ISO 6552)

Body design conditions PN63
PMA – Maximum allowable pressure 63 bar g
TMA – Maximum allowable temperature 400°C
Cold hydraulic test pressure 95 bar g



TD32F & FA
TD32FLC & FLCA

Flanged with in-built strainer

TD3-3
TD3-3A
TD3-3LC
TD3-3LCA

Butt weld with in-built strainer

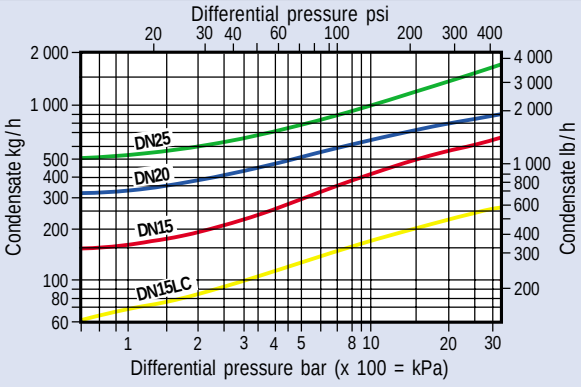
Sizes and pipe connections

DN15LC, 15, 20 and 25
Standard flange:- BS 4504 and DIN PN40, ANSI 300

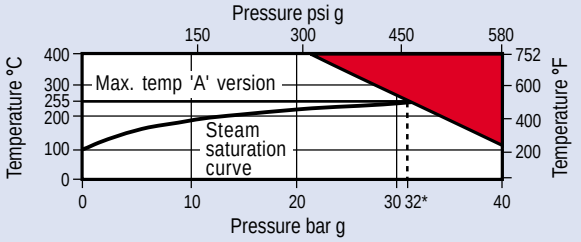
Materials

Body	Stainless steel	ASTM A743 Gr. CA 40
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45
Strainer screen	Stainless steel	ASTM A240 316L
Strainer cap	Stainless steel	AISI 416
Flanges	Carbon steel DIN 17243 C22.8 WS 1.0460	

Capacities



Operating range



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Note: Minimum pressure for satisfactory operation is 0.25 bar g.
PMOB - Maximum operating back pressure is 80% of upstream pressure.

Limiting conditions (ISO 6552)

Body design conditions PN40
PMA - Maximum allowable pressure 40 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 60 bar g

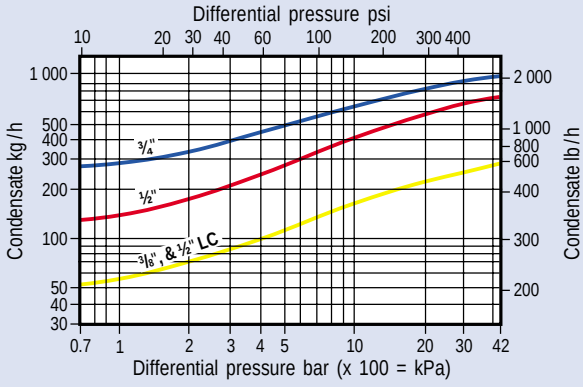
Sizes and pipe connections

⅜", ½" LC, ½", ¾" butt weld to suit schedule 40

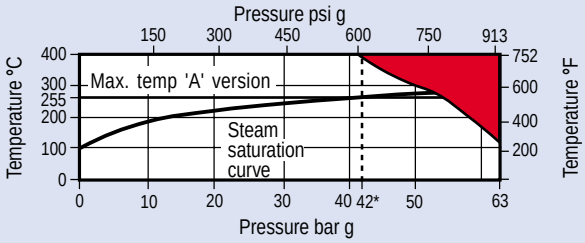
Materials

Body	Stainless steel	ASTM A743 Gr. CA 40F
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45
Strainer screen	Stainless steel	ASTM A240 316L
Strainer cap	Stainless steel	AISI 416
Union tail piece	Carbon steel	BS 970 070 M20
Union nut	Carbon steel	BS 970 220 M07
Gasket	Reinforced exfoliated graphite	

Capacities



Operating range



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

Limiting conditions (ISO 6552)

Body design conditions PN63
PMA - Maximum allowable pressure 63 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 95 bar g

TD259
TD259A

Screwed without strainer

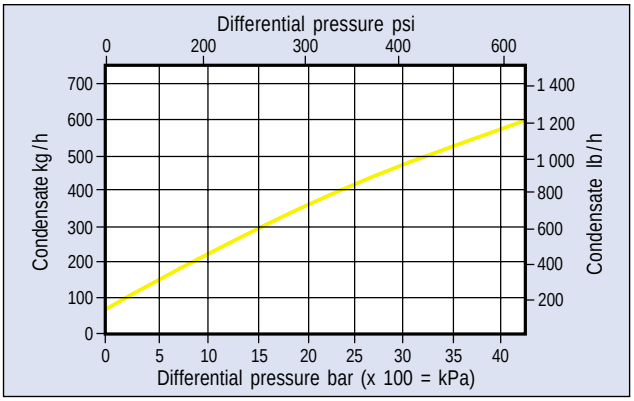
Sizes and pipe connections

¼" screwed BSP or NPT

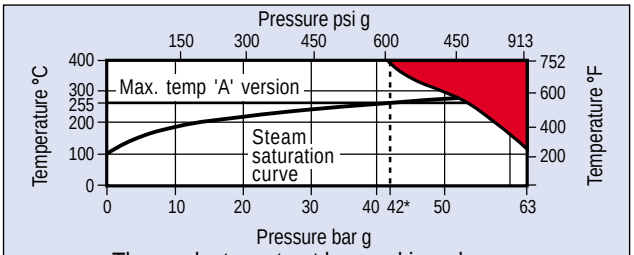
Materials

Body	Stainless steel	AISI 420 F
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45

Capacities



Operating range



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

Limiting conditions (ISO 6552)

Body design conditions PN63
PMA - Maximum allowable pressure 63 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 95 bar g

TD52
TD52A
TD52LC
TD52LCA

Screwed without strainer

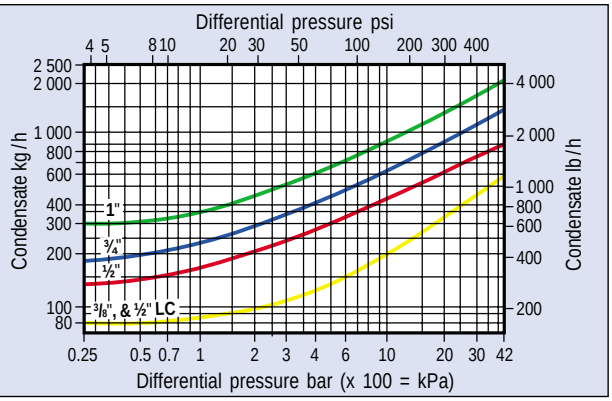
Sizes and pipe connections

⅜", ½"LC, ½", ¾", 1" screwed BSP or NPT.

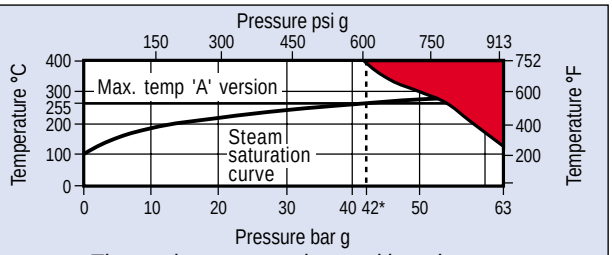
Materials

Body	Stainless steel	AISI 420 F
Cap	Stainless steel	AISI 416
Disc	Stainless steel	BS 1449 420 S45

Capacities



Operating range



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

Limiting conditions (ISO 6552)

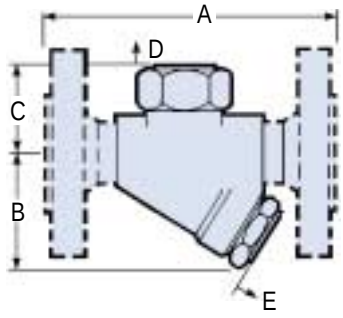
Body design conditions PN63
PMA - Maximum allowable pressure 63 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 95 bar g

Dimensions

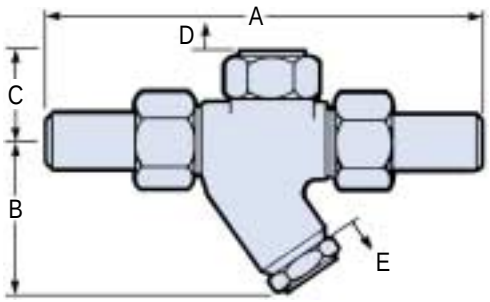
		A	B	C	D	E	Weight (kg)
TD42L TD42LA	⅜"	78	55	41	20	85	0.75
	½"	78	55	41	20	85	0.75
	¾"	90	60	44	20	100	0.95
	1"	95	65	48	20	100	1.50
TD42H TD42HA	½"	78	55	41	41	85	0.80
	¾"	90	60	47	41	100	1.00
	1"	95	65	53	41	100	1.60
TD32F TD32FA TD32FLC TD32FLCA	DN15	150	55	41	40	80	2.40
	DN20	150	60	47	40	95	3.10
	DN25	160	65	53	40	100	4.20
TD3-3 TD3-3A TD3-3LC TD3-3LCA	⅜"	183	60	40	41	-	1.10
	½"	188	62	41	41	-	1.30
	¾"	223	65	45	41	-	1.70
TD42S2 TD42S2LC	½"	78	55	41	41	85	0.80
	¾"	90	60	47	41	100	1.00
TD259 TD259A	¼"	52	42	20	40	-	0.36
TD52	⅜"	54	13	37	41	-	0.43
TD52A	½"	70	15	39	41	-	0.60
TD52LC	¾"	80	20	43	41	-	0.90
TD52LCA	1"	89	23	51	41	-	1.40

Dimensions (approximately) in millimetres

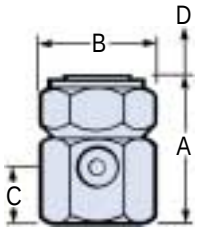
TD42L
TD42LA
TD42H
TD42HA
TD32F
TD32FA
TD32FLC
TD32FLCA
TD42S2
TD42S2LC



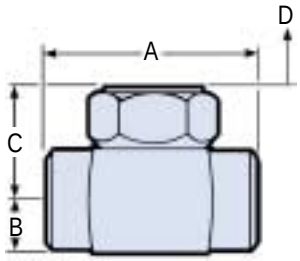
TD3-3 TD3-3LC TD3-3A TD3-3LCA



TD259 TD259A



TD52
TD52A
TD52LC
TD52LCA



Installations

Preferably fitted in horizontal pipe but can be fitted in other positions.

Optional extras

INSULATING COVER:- an insulating cover to prevent the trap being unduly influenced by excessive heat loss such as when subjected to low outside temperatures, wind, rain etc.

INTEGRAL BLOWDOWN VALVE:- the strainer cap can be fitted with manual blowdown valve.

ANTI-AIR-BINDING DISC:- prevents air-binding of the trap under start-up conditions on steam systems where large amounts of air are present.

Diffuser

A DF1 fitted on the downstream side of traps passing condensate to atmosphere, suppresses noise levels and offers protection from high velocity discharge.

Typical specification

The steam traps shall be Spirax Sarco TD42 thermodynamic type having stainless steel bodies with 3 hole flow pattern and screwed connections. They shall incorporate a stainless steel (anti-air-binding) disc, strainer screen and give a tight shut-off.

Insulating covers shall be provided for any traps to be installed outdoors or in exposed positions.

Integral blowdown valves shall be provided for on-line strainer cleaning.

Some of the products shown may not be available in certain markets.

TDLP

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