

spirax sarco

FT46

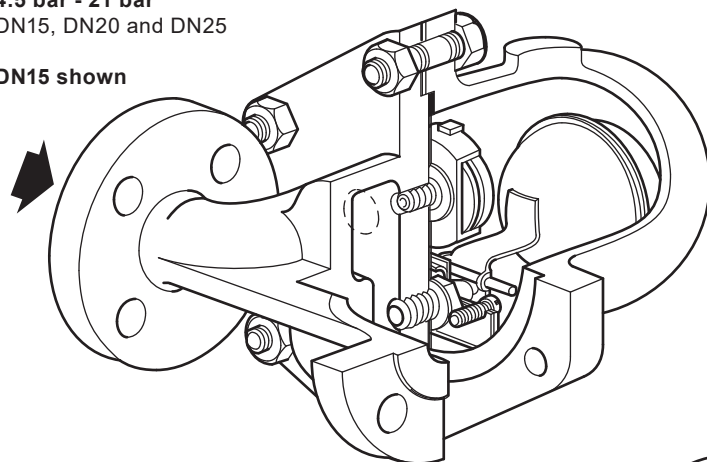
TI-P143-01
ST Issue 11

Stainless Steel Ball Float Steam Traps (DN15 to DN50)

FT46

4.5 bar - 21 bar
DN15, DN20 and DN25

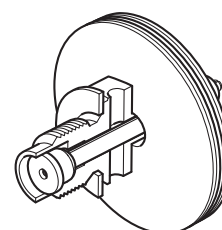
DN15 shown



FT46

DN15 to DN50

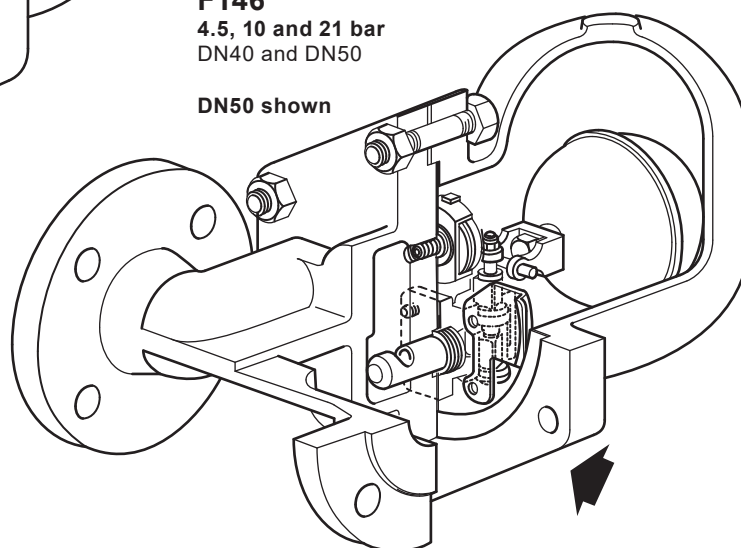
32 bar



FT46

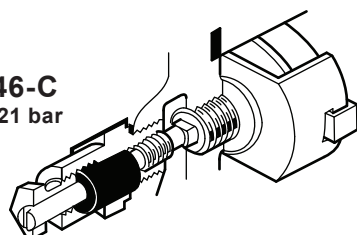
4.5, 10 and 21 bar
DN40 and DN50

DN50 shown



FT46-C

4.5-21 bar




Description

The FT46 is an austenitic stainless steel bodied ball float steam trap having stainless steel working internals and automatic air venting facility. The body and cover castings are produced by a TÜV approved foundry. The trap is supplied with integrally flanged connections and can be maintained without disturbing the pipework. Flow direction for the horizontal trap is clearly illustrated above.

Air vent: The BP99/32 capsule which is used in the FT46 is suitable for use on 150 °C superheat @ 0 bar g. This value reduces with elevated pressure.

The bimetallic element is fitted as standard to the 32 bar variants to provide additional superheat resistance. It is also available on other variants on request. Please refer to the Pressure/temperature limits graph on page 2.

Standards: This product fully complies with the requirements of the European Pressure Equipment Directive and carries the  mark when so required.

Certification: This product is available with certification to EN 10204 3.1. **Note:** All certification/inspection requirements must be stated at the time of order placement.

Optional extras: A manually adjustable needle valve (designated 'C' on the nomenclature i.e. **FT46-C**) can be fitted to the trap. This option provides a **steam lock release (SLR)** feature in addition to the standard air vent.

Note: The SLR and bimetallic air vent cannot be used in conjunction with each other. Alternative arrangements may be available. For further information please consult Spirax Sarco.

The **top of the cover can be drilled and tapped 3/8" BSP or NPT** for the purpose of fitting a balance line if requested at the point of order.

The **bottom of the cover can be drilled and tapped 3/8" BSP or NPT** for the purpose of fitting a drain cock if requested at the point of order.

Steam traps
Ball float

Sizes and pipe connections
DN15, DN20, DN25, DN40 and DN50.

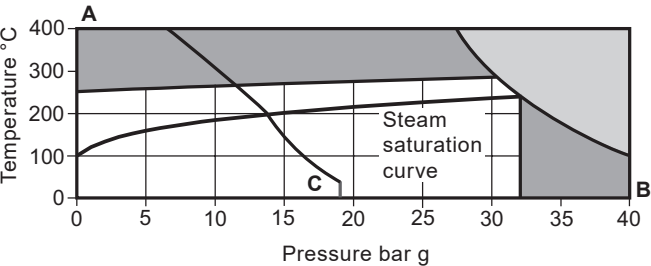
Note: Flow direction when facing the body: - DN15 to DN25 is left to right. - DN40 and DN50 is right to left.

Standard flanges are EN 1092 PN40 with face-to-face dimensions in accordance with EN 26554 (Series 1).

On request - ASME (ANSI) B 16.5 Class 150 and 300 flanges are available with face-to-face dimensions in accordance with EN 26554 (Series 1).

Note: ASME (ANSI) flanges are supplied with tapped (UNC) holes for flange bolts.

Pressure / temperature limits



- The product **must not** be used in this region.
- This product should not be used in this region as damage to the air vent may occur.
- A - B** Flanged EN 1092 PN40 and ASME (ANSI) 300.
- A - C** Flanged ASME (ANSI) 150.

Note: The use of the bimetallic element extends the superheat resistance to in excess of 400 °C.

Body design conditions		PN40
PMA	Maximum allowable pressure	40 bar g @ 100 °C
TMA	Maximum allowable temperature	400 °C @ 27.4 bar g
Minimum allowable temperature		-10 °C
PMO	Maximum operating pressure for saturated steam service	32 bar g @ 239 °C
TMO	Maximum operating temperature	When fitted with a capsule 285 °C @ 30.3 bar g
		When fitted with a bimetallic air vent 400 °C @ 27.4 bar g
Minimum operating temperature		0 °C

Note: For lower operating temperatures consult Spirax Sarco

		Size	DN15 DN20 DN25	DN40 DN50
Δ PMX	Maximum differential pressure	FT46-4.5	4.5 bar	4.5 bar
		FT46-10	10 bar	10 bar
		FT46-14	14 bar	-
		FT46-21	21 bar	21 bar
		FT46-32	32 bar	32 bar

Designed for a maximum cold hydraulic test pressure: 60 bar g

Note: With internals fitted, test pressure must not exceed: 48 bar g

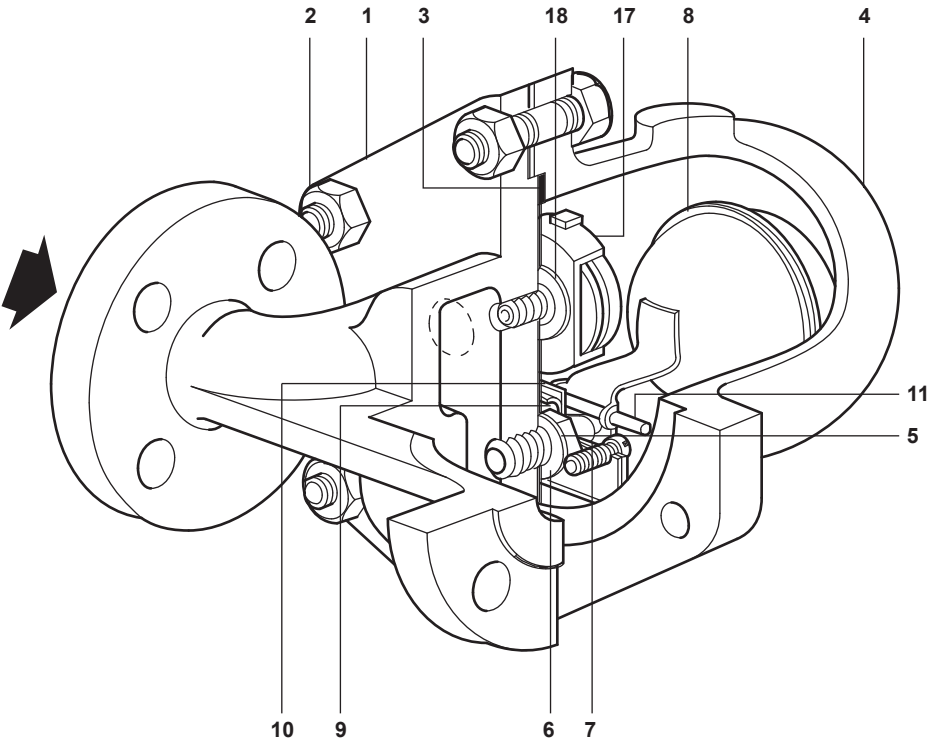
Caution: The trap in its complete operational form must not be subjected to a pressure greater than 48 bar otherwise damage to the internal mechanism may result.

Materials

No.	Part	Material		
1	Body	Austenitic stainless steel (316)	1.4408/CF8M	
2	Cover studs	Austenitic stainless steel	A2.70	
	Cover nuts	Austenitic stainless steel	A4	
3	Cover gasket	Reinforced exfoliated graphite		
4	Cover	Austenitic stainless steel (316)	1.4408/CF8M	
5	Valve seat	DN15, DN20 and DN25	Stainless steel	BS 970 431 S29
	Main valve assembly	DN40 and DN50	Stainless steel	BS 3146 Pt2 ANC2 BS 970 416 S37
6	Valve seat gasket	DN15, DN20 and DN25	Stainless steel	BS 1449 304 S11
	Main valve assembly gasket	DN40 and DN50	Reinforced exfoliated graphite	
7	Pivot frame assembly set screws	DN15, DN20 and DN25	Stainless steel	BS 4183 18/8
	Main valve assembly	Bolts	DN40	Stainless steel BS 970 304 S15
		Studs and nuts	DN50	Stainless steel BS 6105 A4.80
8	Ball float and lever		Stainless steel	BS 1449 304 S16
9	Support frame	DN15, DN20 and DN25	Stainless steel	BS 1449 304 S16
10	Pivot frame	DN15, DN20 and DN25	Stainless steel	BS 1449 304 S16
11	Pivot pin	DN15, DN20 and DN25	Stainless steel	
12	Erosion deflector		Stainless steel	BS 970 431 S29
17	Air vent assembly for all pressure ratings	Stainless steel		
18	Air vent seat gasket		Stainless steel	BS 1449 409 S19
19	SLR assembly		Stainless steel	BS 970 303 S31
20	SLR gasket		Stainless steel	BS 1449 304 S11
21	SLR seal	Graphite		
26	Inlet plate	DN40 and DN50 only	Stainless steel	BS 1449 304 S16

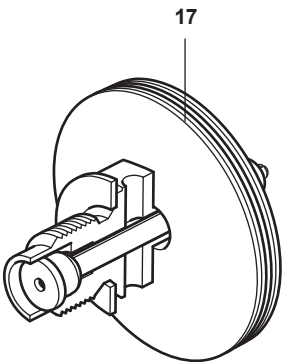
FT46
4.5 bar - 21 bar
DN15, DN20 and DN25

DN15 shown

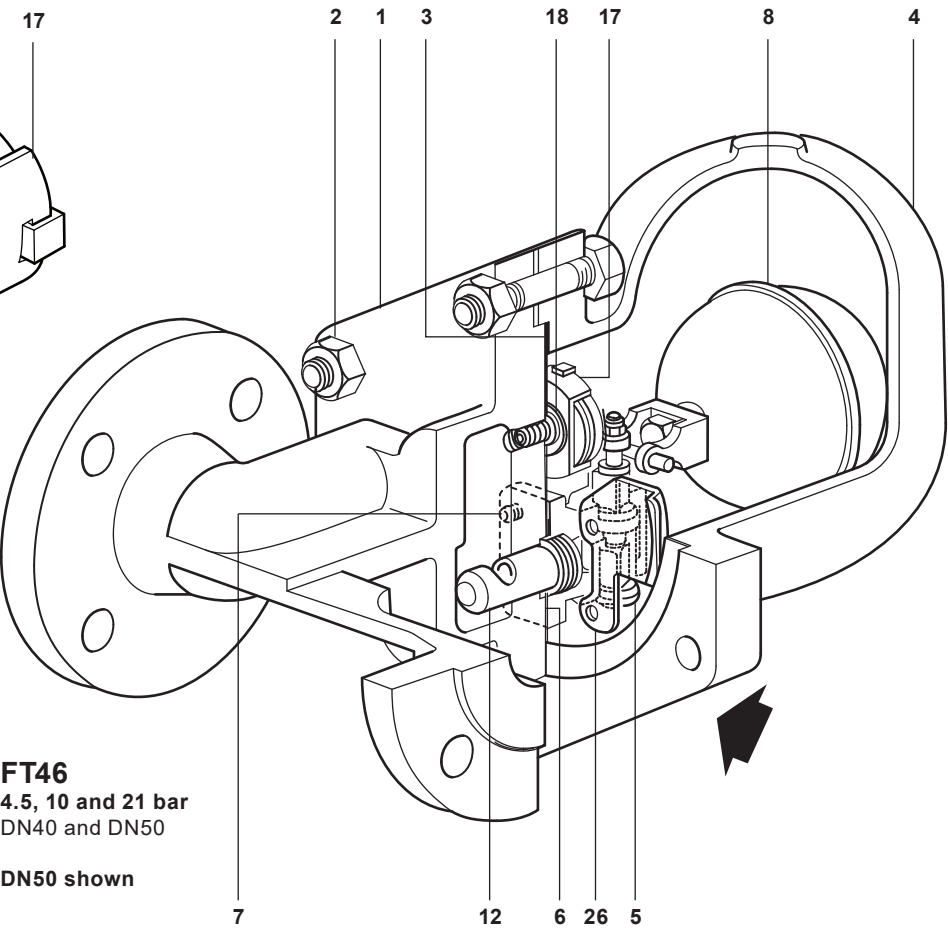
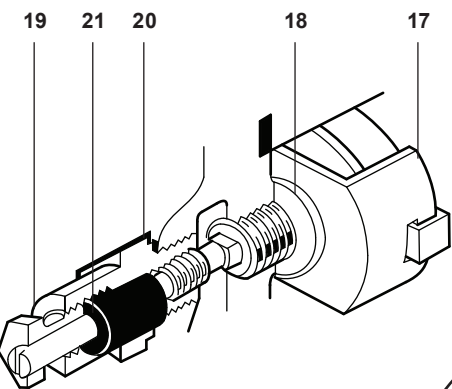


FT46
DN15 to DN50

32 bar



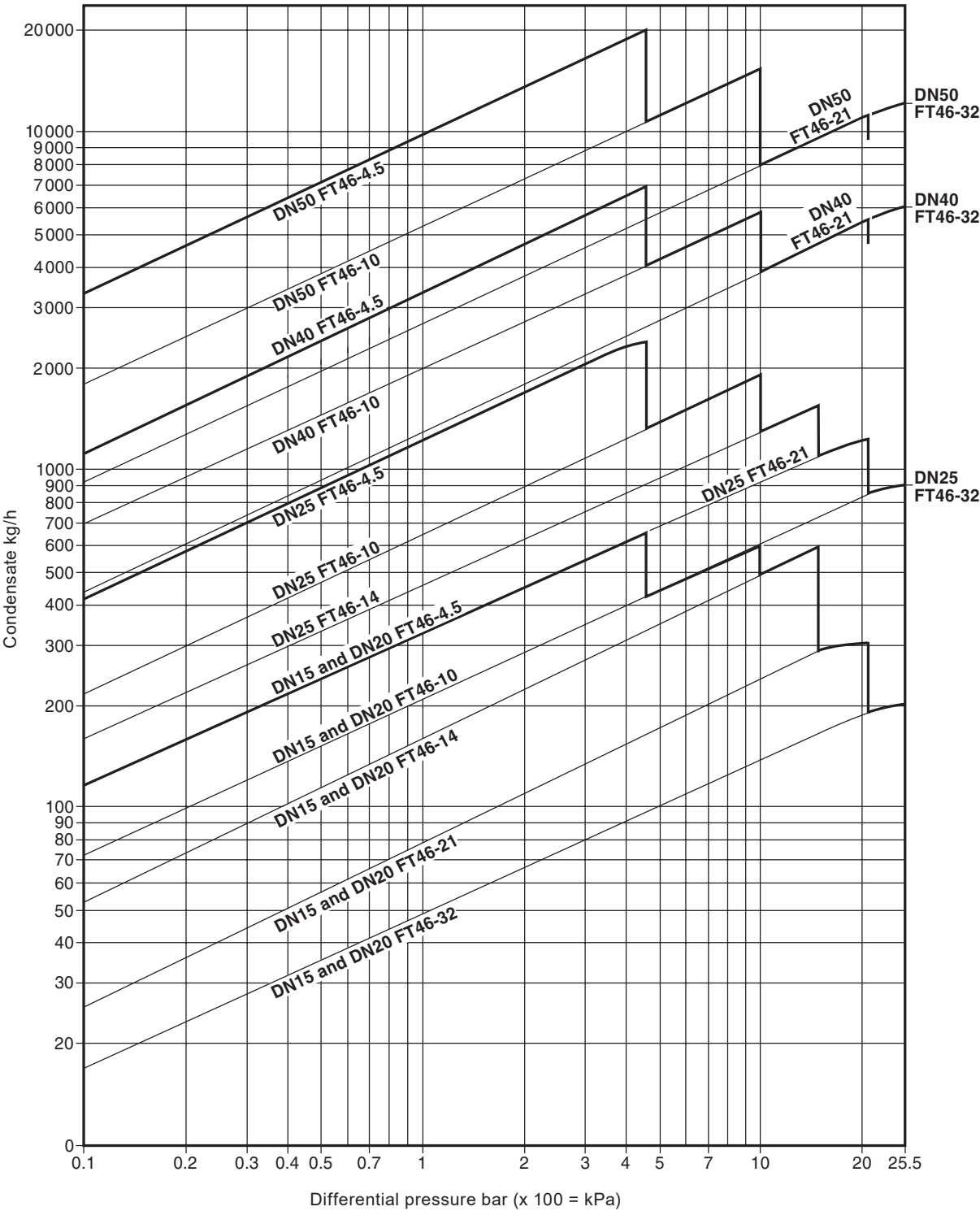
FT46-C
4.5-21 bar



FT46
4.5, 10 and 21 bar
DN40 and DN50

DN50 shown

Steam traps
Ball float
Capacities



Additional cold water capacities from the thermostatic air vent under start-up conditions
Capacities shown above are based on condensate at saturation temperature. Under start-up conditions when the condensate is cold the internal thermostatic air vent will be open and provides additional capacity to the main valve. The following table gives the minimum additional cold water capacities from the air vent.

ΔP (bar)		0.5	1	2	3	4.5	7	10	14	21	32
		Minimum additional cold water capacity (kg/h)									
DN15 and DN20	up to 21 bar	450	600	780	1 040	1 140	1 350	1 530	1 750	2 300	-
	32 bar only	170	250	380	520	600	780	860	1 140	1 170	1 200
DN25, DN40 and DN50	up to 21 bar	460	680	900	1 080	1 300	1 600	1 980	2 050	2 600	-
	32 bar only	90	120	350	460	600	850	900	1 020	1 200	1 300

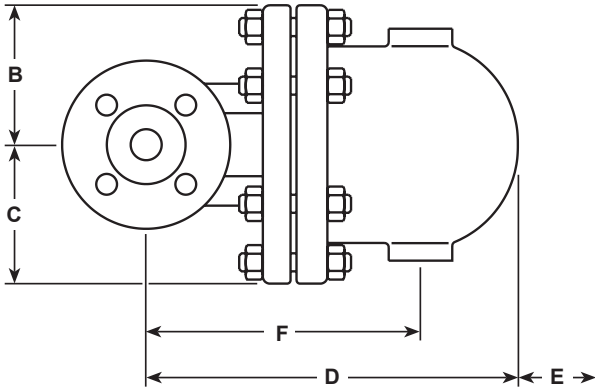
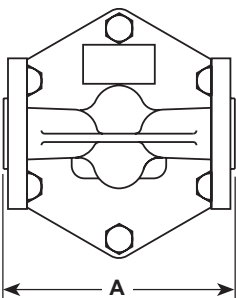
Dimensions/weights (approximate) in mm and kg

Size	A	B	C	D	E	F	Weight
DN15	150	80	80	215	120	155	10.8
DN20	150	80	80	225	120	165	10.8
DN25	160	115	85	276	170	215	15.0
DN40	230	130	115	326	200	200	33.0
DN50	230	141	123	332	200	225	43.0

Face-to-face dimensions in accordance with EN 26554 (Series 1)

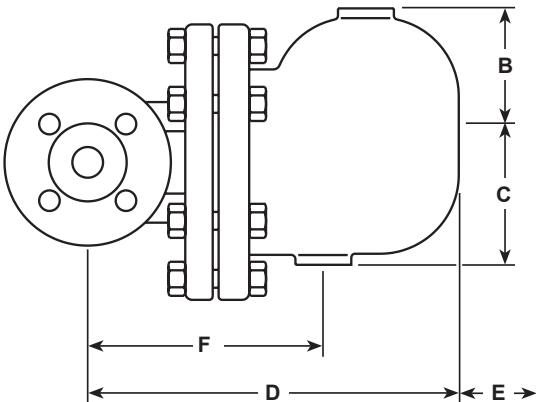
FT46

DN15 and DN20



FT46

DN25, DN40 and DN50



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-S02-30) supplied with the product.

Installation note:

The FT46 must be installed with the direction of flow as indicated on the body, and with the float arm in a horizontal plane so that it rises and falls vertically.

Disposal

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

How to order

Note: Although FT46 4.5 bar - 21 bar versions are fitted with a capsule air vent assembly as standard, they can be fitted with a bimetallic air vent assembly upon request.

Example: 1 off Spirax Sarco DN25 FT46-21 ball float steam trap, having an austenitic stainless steel body and cover with a bimetallic air vent assembly. Connections are to be flanged to EN1092 PN40.

Note: Although the FT46 32 bar is fitted with a bimetallic air vent assembly as standard, it can be fitted with a capsule air vent assembly and steam lock release feature upon request.

Example: 1 off Spirax Sarco DN25 FT46-21 ball float steam trap, having an austenitic stainless steel body and cover with a capsule air vent assembly. Connections are to be flanged to EN1092 PN40.

spirax

sarco

FTS62

TI-P179-14

CMGT Issue 4

Stainless Steel

Ball Float Steam Traps (DN15 to DN25)

Description

The FTS62 is a stainless steel bodied ball float steam trap having stainless steel working internals and automatic air venting facility.


FTS62 available options when facing the body:

L-R	Select L-R for a flow direction of Left-to-Right
or	
R-L	Select R-L for a flow direction of Right-to-Left

Optional extra:

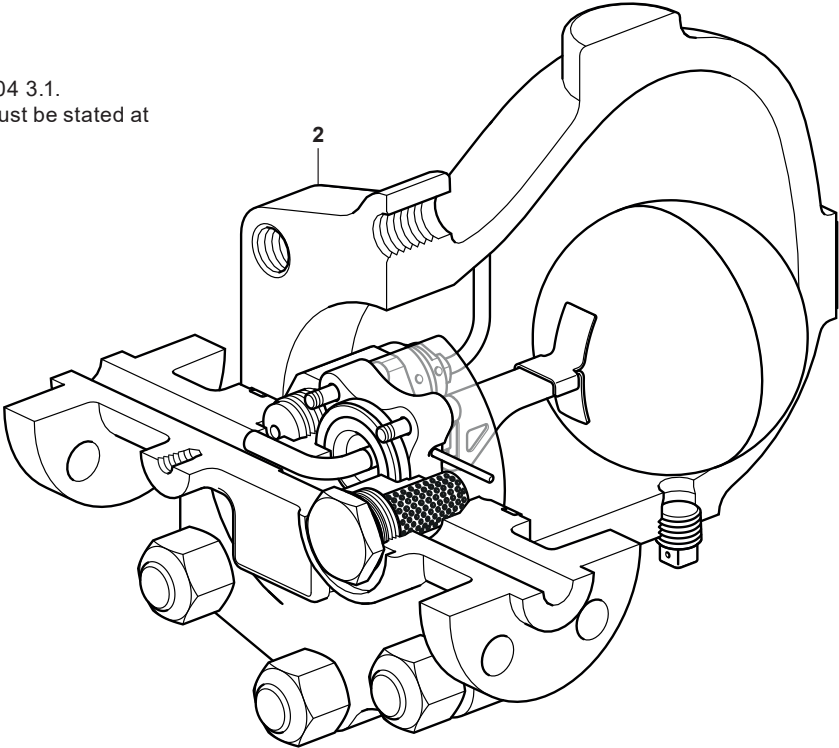
On request the cover (2) can be drilled and tapped for the purpose of fitting a balance line.
If this option is requested at the time of order placement there will be an extra charge incurred and the unit will be treated as a special product.

Standards

This product fully complies with the requirements of the EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations and carries the  mark.

Certification

This unit is available with certification to EN 10204 3.1.
Note: All certification/inspection requirements must be stated at the time of order placement.



8.5

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Sizes and pipe connections

1/2", 3/4" and 1"	Screwed BSP or NPT
1/2", 3/4" and 1"	Socket weld ends to BS 3799 and Class 3000 lbs
Standard flanges:	
DN15, DN20 and DN25	Flanged EN 1092-1 PN100 †
1/2", 3/4" and 1"	Flanged ASME B 16.5 Class 600

Steam traps
Ball float

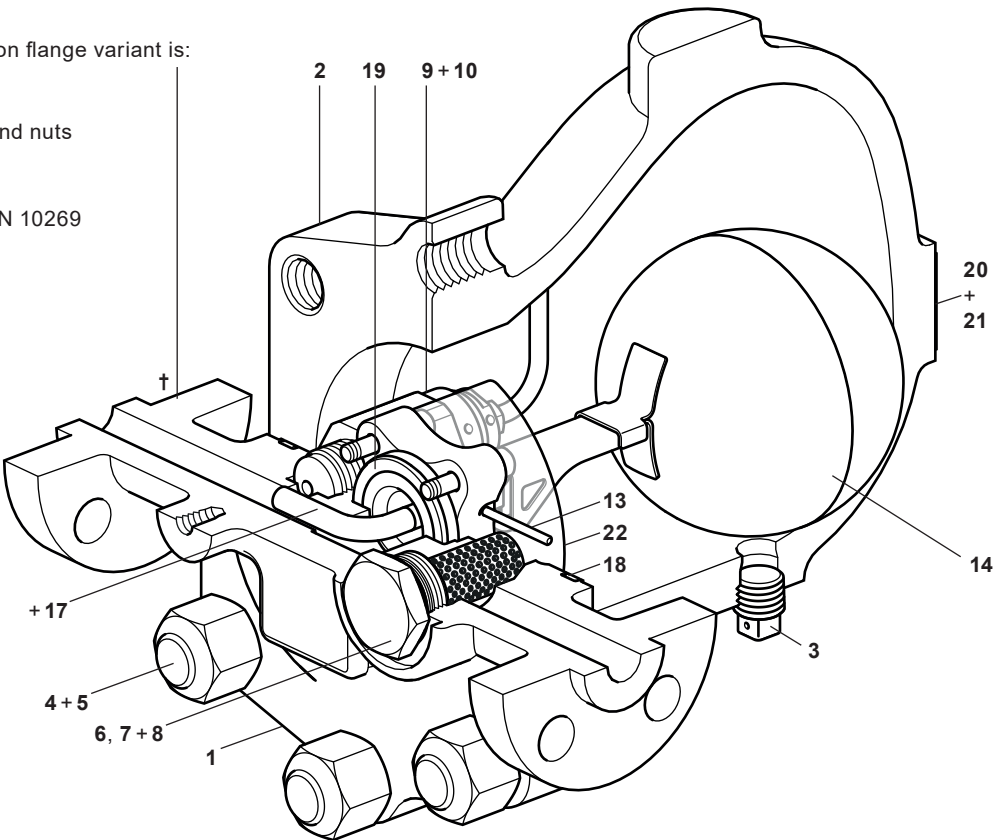
Note for the PN100 variant:
† The material used for the weld on flange variant is:
Stainless steel 1.4301.

The material used for the studs and nuts
upon all versions is

- Studs = ASTM A193 B7
- Nuts = ASTM A194 Gr. 4 to EN 10269

11, 12, 15, 16

***Please note** that part
numbers **11, 12, 15** and **16**
are more clearly identified on
the spares illustration on
page 6.

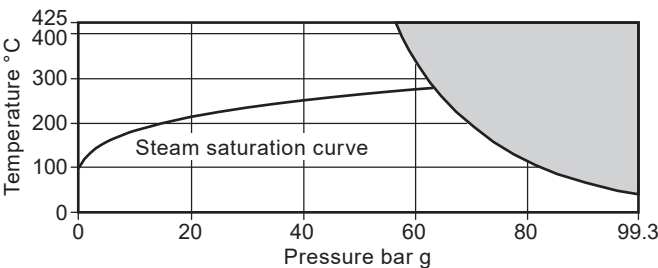


Materials

No.	Part	Material	
1	Body	Stainless steel	ASTM A351 CF8 EN10213 1.4308
2	Cover		
3	3/8" NPT taper plug	Stainless steel	CF8/1.4308 or 1.4301/304
4	3/4" UNF nut (6)	Carbon steel	ASTM A194 Gr. 7
5	3/4" UNF studs x 85mm long (x6)	Carbon steel	ASTM A193 B7
6	Strainer cap	Stainless steel	CF8/1.4308 or 1.4301/304
7	Strainer screen	Stainless steel	AISI 316L
8	'S' type gasket	Stainless steel	AISI 304
9	Air vent assembly	Stainless steel	AISI 431 S29 + 303
10	Air vent tube	Stainless steel	ASTM A269 304L
11*	Seat clamp	Stainless steel	CF8/1.4308 or AISI 303
12*	M6 x 30 long cap screw (x4)	Stainless steel	EN 150 3506-1
13	Pivot pin	Stainless steel	ASTM A276 304
14	Float assembly	Stainless steel	AISI 304L
15*	1/2" Ø ball	Stainless steel	AISI 316
16*	Conical spring	Stainless steel	Gr. 302 S26 Gr. 1
17	Valve seat and discharge pipe assembly	Stainless steel	AISI 431 S29 + 304L
18	Spirally wound gaskets	Body to Cover and Seat to Body	Graphite filler + 304 stainless strip
19			
20	Name-plate	Stainless steel	204
21	Hammer drive screws (x 2)	Stainless steel	18-8
22	Baffle plate	Stainless steel	304L

Pressure/temperature limits (ISO 6552)

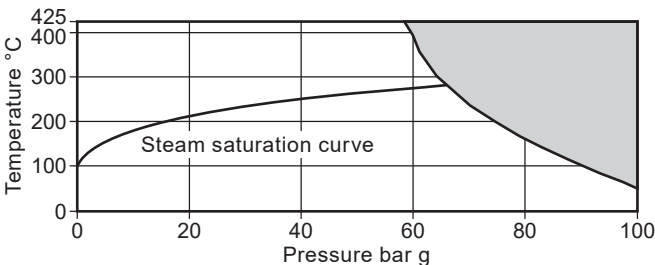
Screwed
Socket weld



The product must not be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

Body design condition		ASME Class 600
PMA	Maximum allowable pressure	99.3 bar g @ 38 °C
TMA	Maximum allowable temperature	425 °C @ 56 bar g
Minimum allowable temperature		-29 °C
PMO	Maximum operating pressure for saturated steam service	63.1 bar g @ 280 °C
TMO	Maximum operating temperature	425 °C @ 56 bar g
Minimum operating temperature Note: For lower operating temperatures consult Spirax Sarco		0 °C
Minimum operating differential pressure		0.1 bar g
ΔPMX	Maximum differential pressure	FTS62-46 46 bar
		FTS62-62 62 bar
Designed for a maximum cold hydraulic test pressure of:		149 bar g

Flanged
PN100



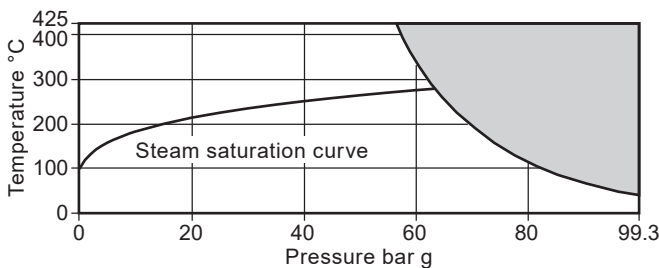
The product must not be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

Body design condition		PN100
PMA	Maximum allowable pressure	100 bar g @ 50 °C
TMA	Maximum allowable temperature	425 °C @ 58.9 bar g
Minimum allowable temperature		-29 °C
PMO	Maximum operating pressure for saturated steam service	65.8 bar g @ 283 °C
TMO	Maximum operating temperature	425 °C @ 58.9 bar g
Minimum operating temperature Note: For lower operating temperatures consult Spirax Sarco		0 °C
Minimum operating differential pressure		0.1 bar g
ΔPMX	Maximum differential pressure	FTS62-46 46 bar
		FTS62-62 62 bar
Designed for a maximum cold hydraulic test pressure of:		150 bar g

Steam traps
Ball float

Pressure/temperature limits (ISO 6552) - Flanged ASME

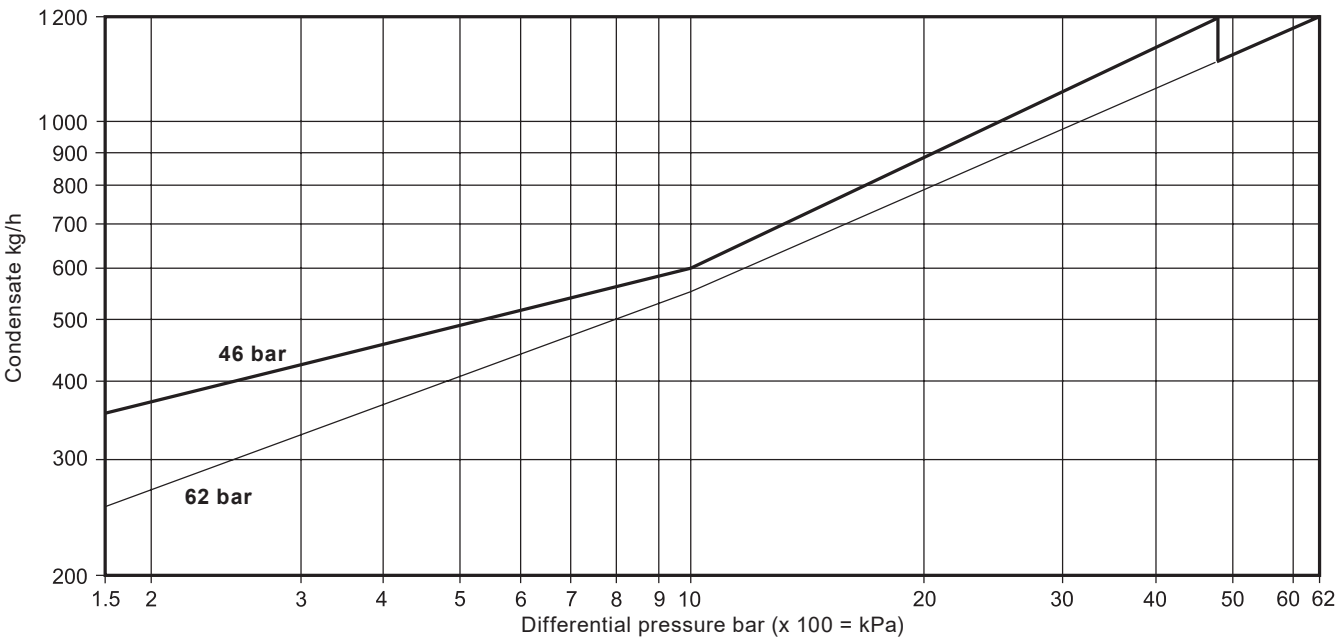
Flanged
ASME Class 600



The product must not be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

Body design condition		ASME Class 600
PMA	Maximum allowable pressure	99.3 bar g @ 38 °C
TMA	Maximum allowable temperature	425 °C @ 56 bar g
Minimum allowable temperature		-29 °C
PMO	Maximum operating pressure for saturated steam service	63.1 bar g @ 280 °C
TMO	Maximum operating temperature	425 °C @ 56 bar g
Minimum operating temperature Note: For lower operating temperatures consult Spirax Sarco		0 °C
Minimum operating differential pressure		0.1 bar g
ΔPMX	Maximum differential pressure	FTS62-46 46 bar
		FTS62-62 62 bar
Designed for a maximum cold hydraulic test pressure of:		149 bar g

Capacities



Capacities shown above are based on condensate at saturation temperature. Under start-up conditions when condensate is cold the internal bi-metallic air vent will be open and provides additional capacity to the main valve. The following table gives the minimum additional cold water capacities from the air vent on all sizes.

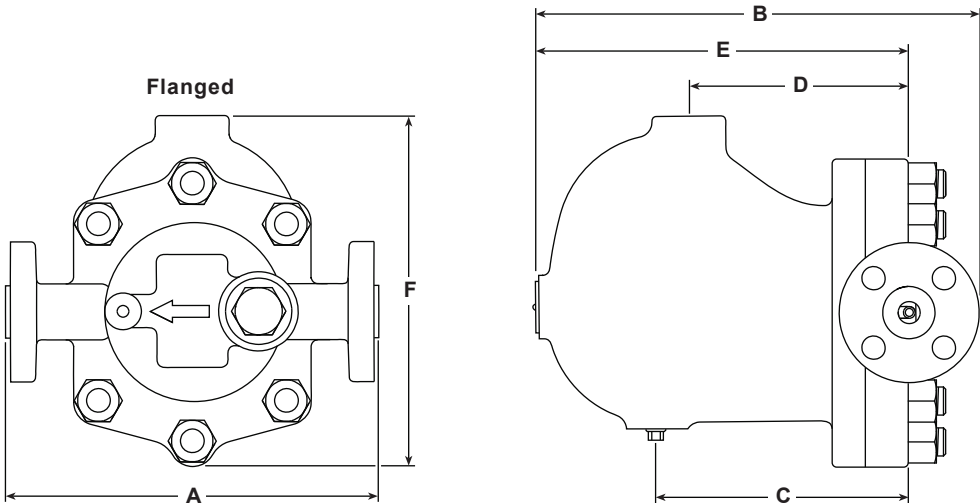
Note: The air vent closing temperature range = 120 °C to 135 °C.

For differential pressures less than 1.5 bar g, the additional cold water capacity is minimal.

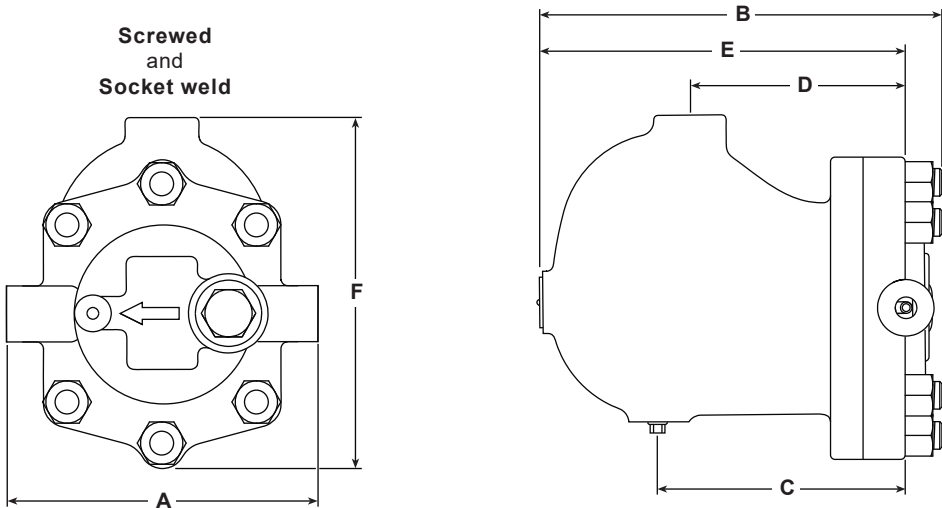
ΔP (bar)	1.5	10	30	46	62
FTS62	Minimum additional cold water capacity (kg/h)				
46 bar version	20	426	536	800	
62 bar version	20	350	440	930	800

Dimensions/weights (approximate) in mm and kg

Size	Flanged						Screwed and Socket weld			Common sizes			
	PN100			ASME 600			A	B	Weight	C	D	E	F
	A	B	Weight	A	B	Weight							
DN15	300	304.0	25.0	261	299	24.0	190	287.5	22.0	172.5	148	251.5	239
DN20	300	316.5	26.0	271	309	25.5	190	287.5	22.0	172.5	148	251.5	239
DN25	300	321.5	28.0	291	314	27.0	190	287.5	22.0	172.5	148	251.5	239



Notes: 1. PN100 EN 1092-1 and ASME 600 B 16.5 face-to-face dimensions



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P179-15) supplied with the product.

Installation note:

The FTS62 must be installed with the direction of flow as indicated on the body, and with the float arm in a horizontal plane so that it rises and falls vertically.

Disposal

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

How to order

Example: 1 off Spirax Sarco DN25 FTS62-62 L-R ball float steam trap, flanged to EN 1092 PN100 with stainless steel body and cover and thermostatic air vent.

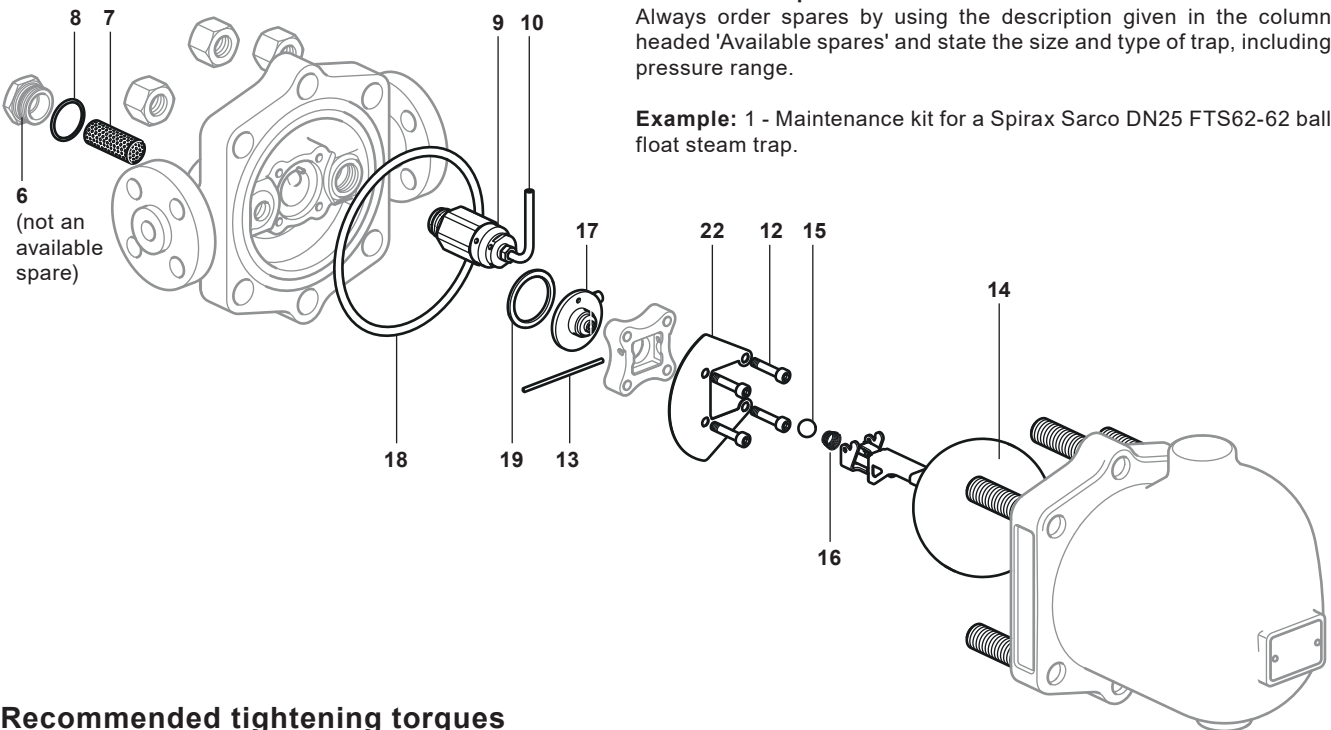
Steam traps
Ball float

Spare parts



The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Body/cover gasket kit	18
Air vent assembly + Air vent tube	9 and 10
Strainer screen + 'S' type gasket	7 and 8
¾" NPT taper plug	3
M6 x 30 long cap screw (x 4)	12
Pivot pin	13
Float assembly	14
Maintenance kit	
½" Ø ball	15
Conical spring	16
Valve seat and discharge pipe assembly	17
'S' type gasket + Spirally wound gaskets	8, 18 and 19
Baffle plate	22
Overhaul kit	3, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19 and 22



Recommended tightening torques

Item	Part		inch or mm		N m	lbf ft
3	¾" NPT Square head plug	11 mm A/F		¾" NPT	As required	
4	¾" UNF Hex. Nut	1.125" A/F		¾" UNF	252-260	186 - 192
6	Strainer cap	32 mm A/F		M28 x 1.5	170-190	125-140
9	Air vent assembly	32 mm A/F		M22 x 1.5	80-88	59-65
10	Air vent tube assembly	11 mm A/F		M10 x 1.5	10-12	7-9
12	M6 x 30 Socket head cap screw	5 A/F (Hex Key)		M6	14-16	10-12

