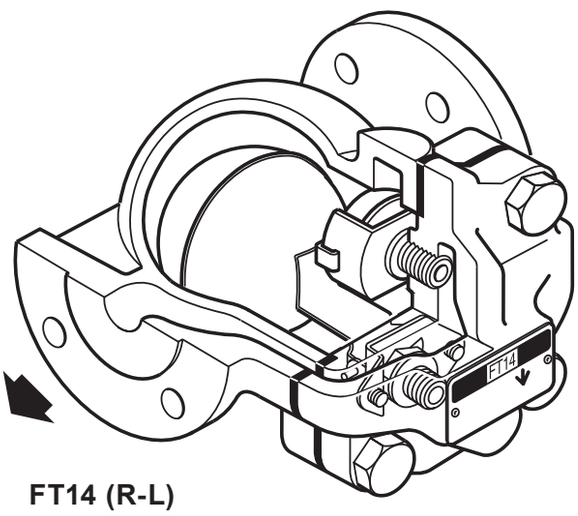
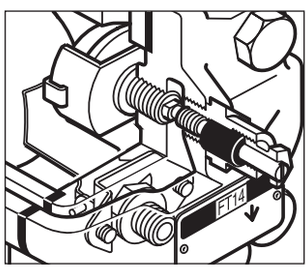
TI-S02-26
CMGT Issue 9

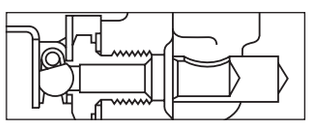
FT14
Ball Float Steam Trap (Flanged)



FT14 (R-L)



FT14-C (R-L)


Main valve assembly DN25

Description
The FT14 is an SG iron bodied ball float steam trap having stainless steel working internals and integral automatic air venting facility. The FT14 can be maintained without disturbing the pipework.

Available types

FT14 (R-L)	Horizontal connections with flow from right to left
FT14 (L-R)	Horizontal connections with flow from left to right

Please note: On the cover of both of these traps, the orientation of the connections can be adjusted on site in preparation of downward vertical flow applications.

Capsule
The BP99/32 capsule which is used in the FT14 is suitable for use on 150 °C superheat @ 0 bar g and 50 °C superheat @ 32 bar g.

Optional extras
A **manually adjustable needle valve** (designated 'C' on the nomenclature i.e. **FT14-C**) can be fitted to the trap. This option provides a **steam lock release (SLR)** feature in addition to the standard air vent. For further information please consult Spirax Sarco.

The FT14 has the option of an **integral strainer screen** (designated 'X' on the nomenclature i.e. **FT14-X**).

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

Certification
This product is available with a manufacturers' Typical Test Report.
Note: All certification /inspection requirements must be stated at the time of order placement.

Sizes and pipe connections
DN15, DN20 and DN25
Flanged EN 1092 PN16, ASME 150 and JIS/KS 20.

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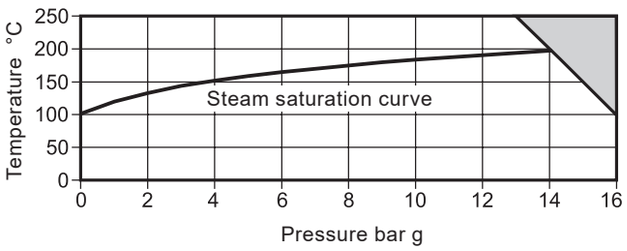
Steam traps
Ball float

Pressure/temperature limits (ISO 6552)



The product **must not** be used in this region.

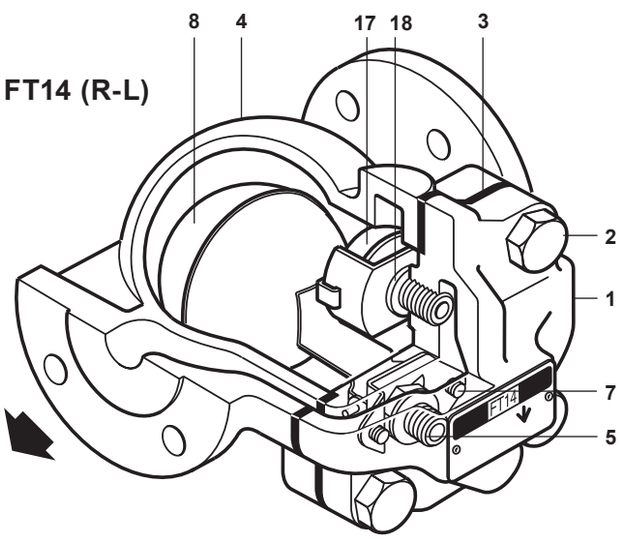
Body design conditions			PN16
PMA	Maximum allowable pressure		16 bar g @ 100 °C
TMA	Maximum allowable temperature		250 °C @ 13 bar g
Minimum allowable temperature			-10 °C
PMO	Maximum operating pressure for saturated steam service		14 bar g
TMO	Maximum operating temperature		250 °C @ 13 bar g
Minimum operating temperature			0 °C
ΔPMX	Maximum differential pressure	FT14-4.5	4.5 bar
		FT14-10	10 bar
		FT14-14	14 bar
Designed for a maximum cold hydraulic test pressure of 24 bar g			

Materials

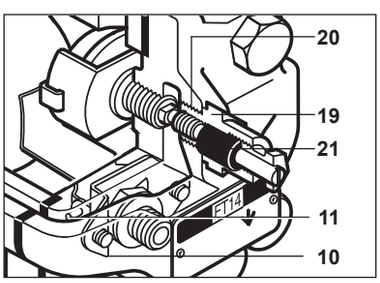
No.	Part	Material	
1*	Body	SG iron	EN 1563 EN-GJS-400-15
2	Cover bolts	Steel	BS 3692 Gr. 8.8
3	Cover gasket	Reinforced exfoliated graphite	
4	Cover	SG iron	EN 1563 EN-GJS-400-15
5	Valve seat	Stainless steel	BS 970 431 S29
6	Valve seat gasket	Stainless steel	BS 1449 409 S19
7	Pivot frame assembly screws	Stainless steel	BS 6105 Cl A2-70
8	Ball float and lever	Stainless steel	BS 1449 304 S16
10	Pivot frame	Stainless steel	BS 1449 304 S16
11	Pivot pin	Stainless steel	
12*	Erosion deflector (DN25 only)	Stainless steel	BS 970 431 S29
17	Air vent assembly	Stainless steel	BS 1449 304 S19
18	Air vent seat gasket	Stainless steel	BS 1449 409 S19
19	SLR assembly	Stainless steel	BS 970 303 S21
20	SLR gasket	Stainless steel	BS 1449 304 S16
21	SLR seal	Graphite	
28	Valve spring (DN25 only)	Stainless steel	BS 2056 302 S26

*** Note:** Item 12 is pressed into item 1 (DN25 only).

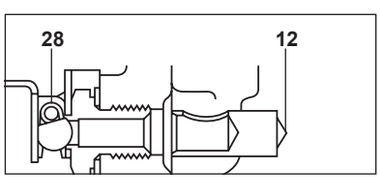
FT14 (R-L)



FT14-C (R-L)



Main valve assembly DN25



8.5
18

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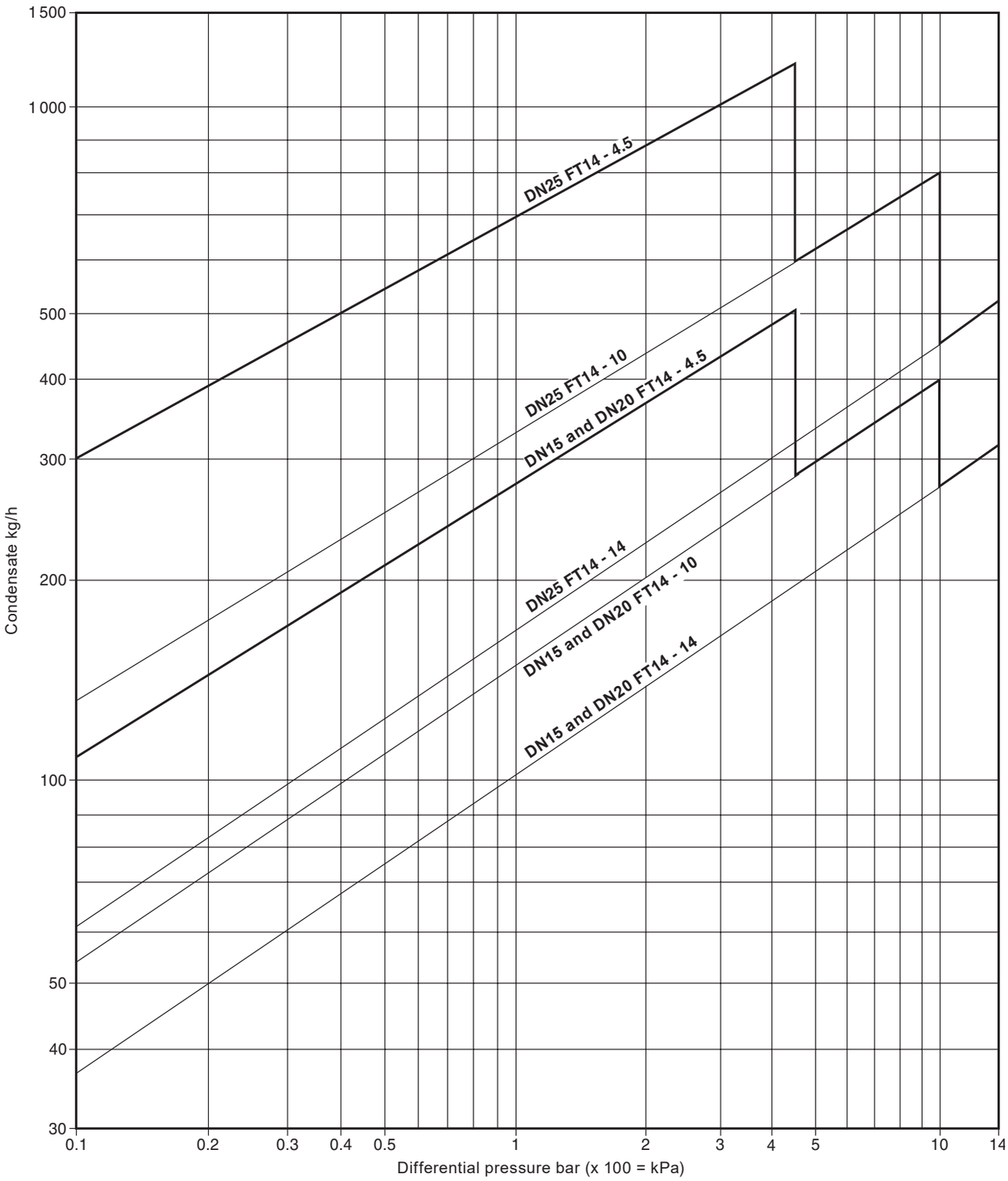
Capacities

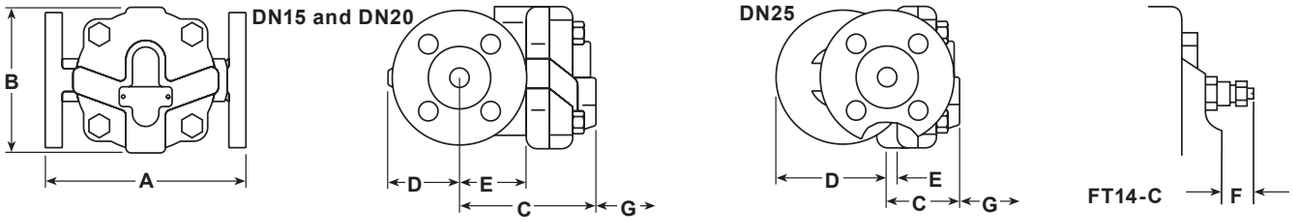


Capacities shown above are based on condensate at saturation temperature. When discharging sub-cooled condensate the air vent provides extra capacity. Under start-up conditions when the condensate is cold the internal thermostatic air vent will be open and provides additional capacity to the main valve. On 4.5 bar units this will provide a minimum of 50% increased capacity above the hot condensate figures shown. On 10 and 14 bar units this will be a minimum increase of 100% on the published capacity. 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
	Minimum additional cold water capacity (kg/h)							
DN15 and DN20	70	140	250	380	560	870	1130	1500
DN25	120	240	360	500	640	920	1220	1500

Steam traps
Ball float

Dimensions/weights (approximate) in mm and kg



Size	A PN/ASME	A JIS/KS	B	C	D	E	F	G Withdrawal distance	Weight
DN15	150	150	107	101	51	47	26.5	115	4.5
DN20	150	150	107	101	51	47	26.5	115	5.0
DN25	160	170	117	70	100	10	21.0	120	6.5

Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-S02-13) supplied with the product.

Installation note:
The FT14 must be installed with the direction of flow as indicated on the body, and with the float arm in a horizontal plain so that it rises and falls vertically. If required the flow orientation can be changed on site.

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 FT14-4.5 (R-L) ball float steam trap with flanged PN16 connections and integral air vent.

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Spare parts

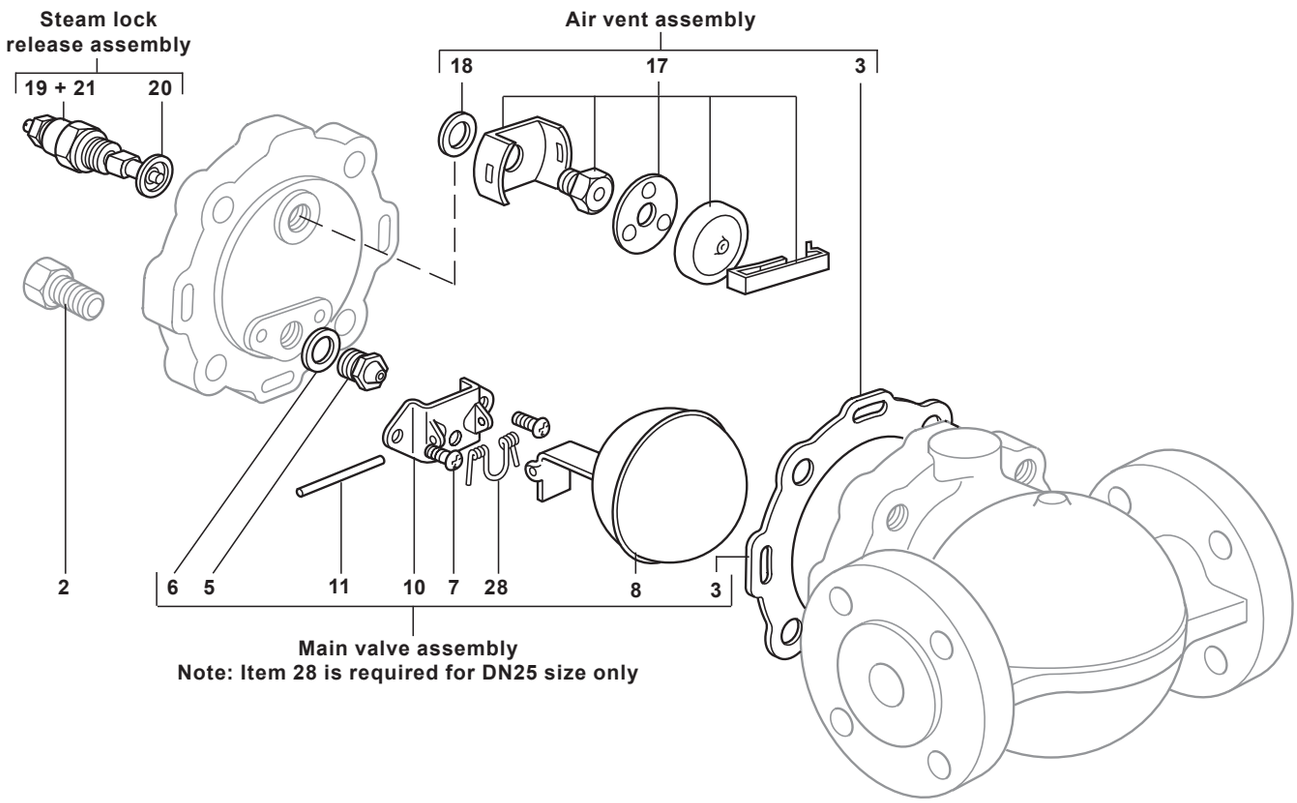
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Main valve assembly with float	**3, 5, 6, 7** (2 off)**, 8, 10, 11, 28** (DN25 only)
Air vent assembly	**3, 17, 18**
Steam lock release and air vent assembly	**3, 17, 18, 19, 20, 21**
Cover gasket (packet of 3)	**3**
Maintenance kit	**3, 5, 6, 7** (2 off)**, 8, 10, 11, 17, 18, 28** (DN25 only)

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size, type of trap and pressure range.
Example: 1 - Main valve assembly for a Spirax Sarco DN25 FT14-10 ball float steam trap.



Recommended tightening torques

Item	or mm		N m
2	17 A/F	M10 x 30	47 - 50
5	17 A/F		50 - 55
7	Pozidrive	M4 x 6	2.5 - 3.0
17	17 A/F		50 - 55
19 and **21**	19 A/F		50 - 55

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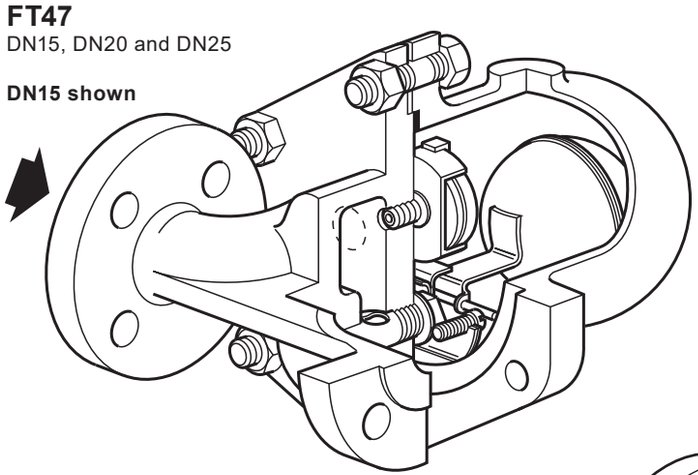
8 Steam traps
Ball float

TI-P142-01
CMGT Issue 14

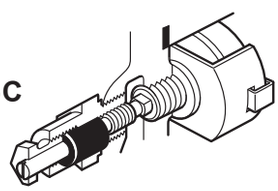
FT47
SG Iron
Ball Float Steam Traps (DN15 to DN50)

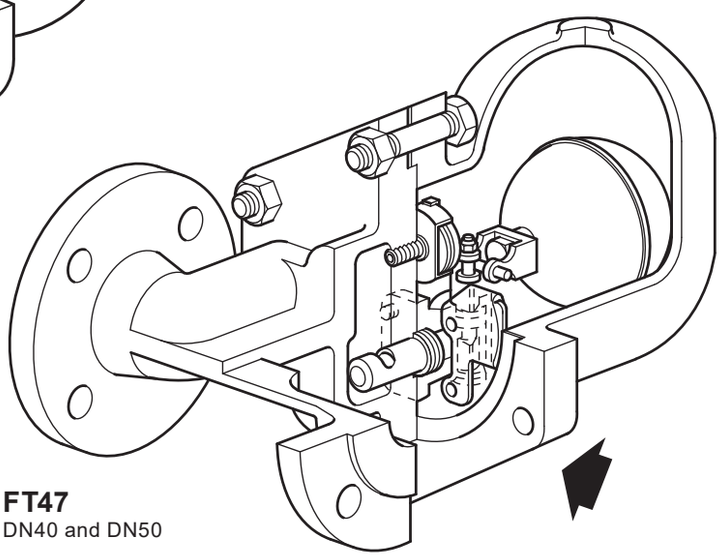
FT47
DN15, DN20 and DN25

DN15 shown



FT47-C





FT47
DN40 and DN50

DN50 shown

Description
The FT47 is an SG iron ball float steam trap with integral automatic air venting facility. It is available with horizontal flanged connections as well as vertical flanged connections, designated FT47V. As an option in the horizontal version up to 21 bar g, a manually adjustable needle valve can be added for use as a steam lock release designated FT47-C. If required, the cover can be drilled and tapped ⅜" BSP or NPT for the purpose of fitting a drain cock. For the horizontal DN50 only, body and cover castings are produced by a TÜV approved foundry.

Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED) and carries the CE mark when so required.

Certification
This product is available with a manufacturers' Typical Test Report. As an available option certification to EN 10204 3.1 can be supplied.
Note: All certification/inspection requirements must be specified at the time of order placement.

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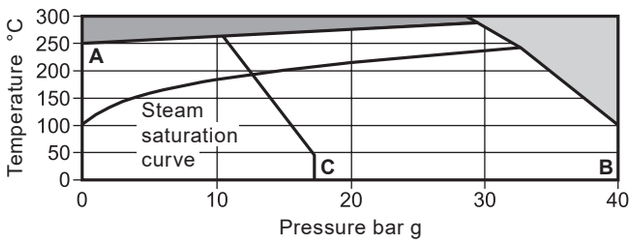
Steam traps
Ball float

Sizes and pipe connections

DN15, DN20, DN25, DN40 and DN50.
Note: Flow direction, for horizontal orientated traps, when facing the body:
- DN15 to DN25 is left to right.
- DN40 and DN50 is right to left.
For vertically orientated traps the flow is downwards only.
Standard flanges are EN 1092 PN40 with face-to-face dimensions in accordance with EN 26554 (Series 1).
On request ASME B 16.5 Class 150 flanges are also available with face-to-face dimensions in accordance with EN 26554 (Series 1).
ASME flanges are supplied with tapped (UNC) holes for flanged 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 internals may occur.

A - C Flanged ASME (ANSI) A150

A - B Flanged EN 1092 PN40

Body design conditions		PN40
PMA	Maximum allowable pressure	40 bar g @ 100 °C
TMA	Maximum allowable temperature	300 °C @ 28 bar g
Minimum allowable temperature		-10 °C
PMO	Maximum operating pressure for saturated steam service **Note:** The DN40 and DN50 traps are limited to a PMO equal to ΔPMX	32 bar g @ 239 °C
TMO	Maximum operating temperature	285 °C @ 29 bar g
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco		0 °C

ΔPMX Maximum differential pressure

Size	DN15, 20, 25	DN40, 50
FT47-4.5	4.5 bar	4.5 bar
FT47-10	10 bar	10 bar
FT47-14	14 bar	-
FT47-21	21 bar	21 bar
FT47-32	32 bar	32 bar

Designed for a maximum cold hydraulic test pressure of :
Note: With internals fitted, test pressure must not exceed ΔPMX — 60 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.

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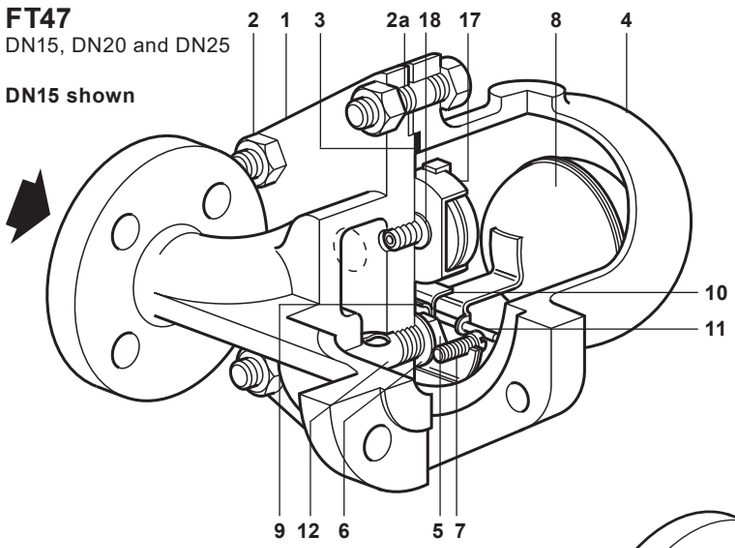
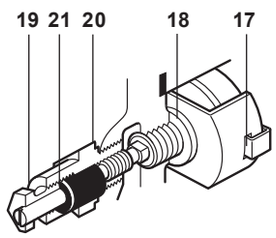
Materials

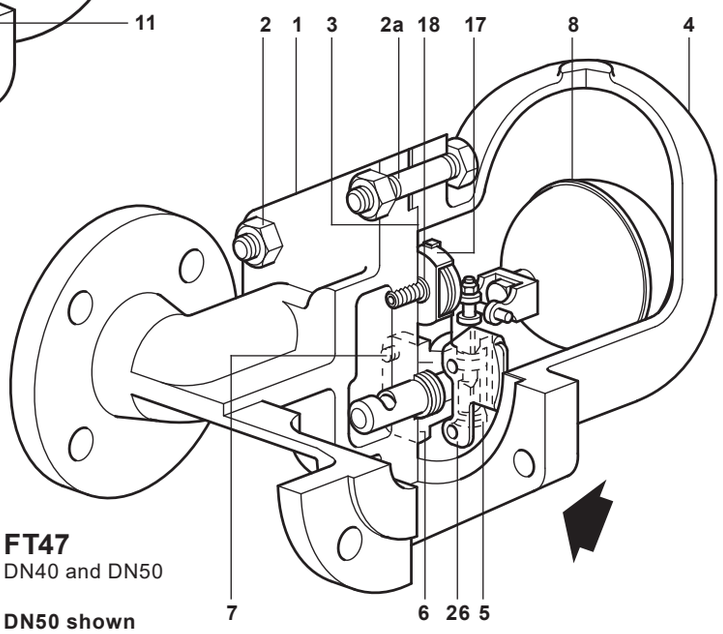
FT47
DN15, DN20 and DN25

DN15 shown



FT47-C





FT47
DN40 and DN50

DN50 shown

No.	Part		Material		
1	Body		DN15, DN20, DN25 and DN40	SG iron	5.3103
			DN50	SG iron	5.3103
2	Cover nuts		DN15, DN20 and DN25	Steel	EN 10269 25 Cr Mo 4
			DN40 and DN50	Steel	DIN 17420 24 Cr Mo 5
2a	Cover stud			Steel	DIN 17420 21 Cr Mo V57
3	Cover gasket			Reinforced exfoliated graphite	
4	Cover			SG iron	DIN 1693 5.3103
5	Valve seat		DN15, DN20 and DN25	Stainless steel	BS 970 431 S29
	Main valve assembly with erosion deflector		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	
	Pivot frame assembly set screws		DN15, DN20 and DN25	Stainless steel	BS 4183 18/8
7	Main valve assembly	Bolts	DN40	Stainless steel	BS 970 302 S25
		Studs and nuts	DN50	Stainless steel	BS 970 431 S29
8	Ball float and lever			Stainless steel	BS 1449 304 S16

Materials continued on the next page

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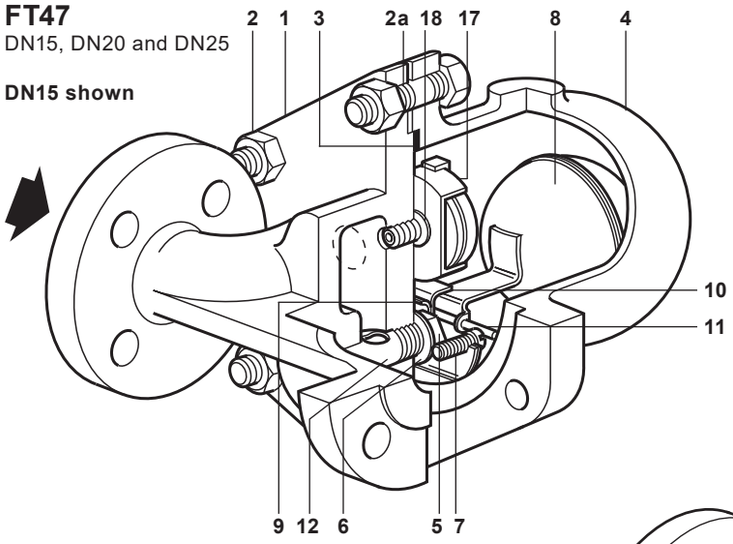
Steam traps
Ball float

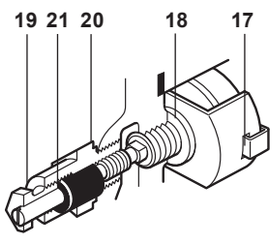
Materials (continued)

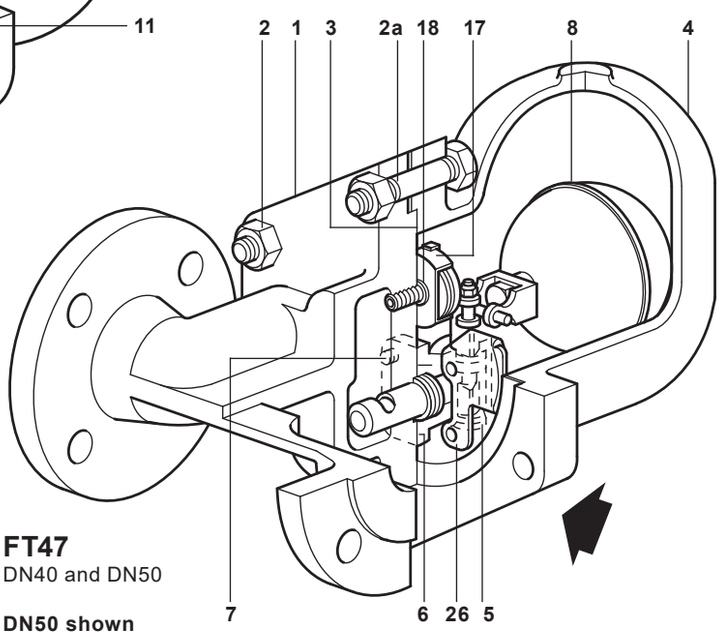
FT47
DN15, DN20 and DN25

DN15 shown



FT47-C





FT47
DN40 and DN50

DN50 shown

No.	Part	Material		
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	DN15, DN20 and DN25 for horizontal installations only	Stainless steel	BS 970 431 S29
17	Air vent assembly		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		Steel	BS 1449 CS 4
21	SLR seal		Graphite	
26	Inlet plate	DN40 and DN50 for horizontal installations only	Stainless steel	BS 1449 304 S16

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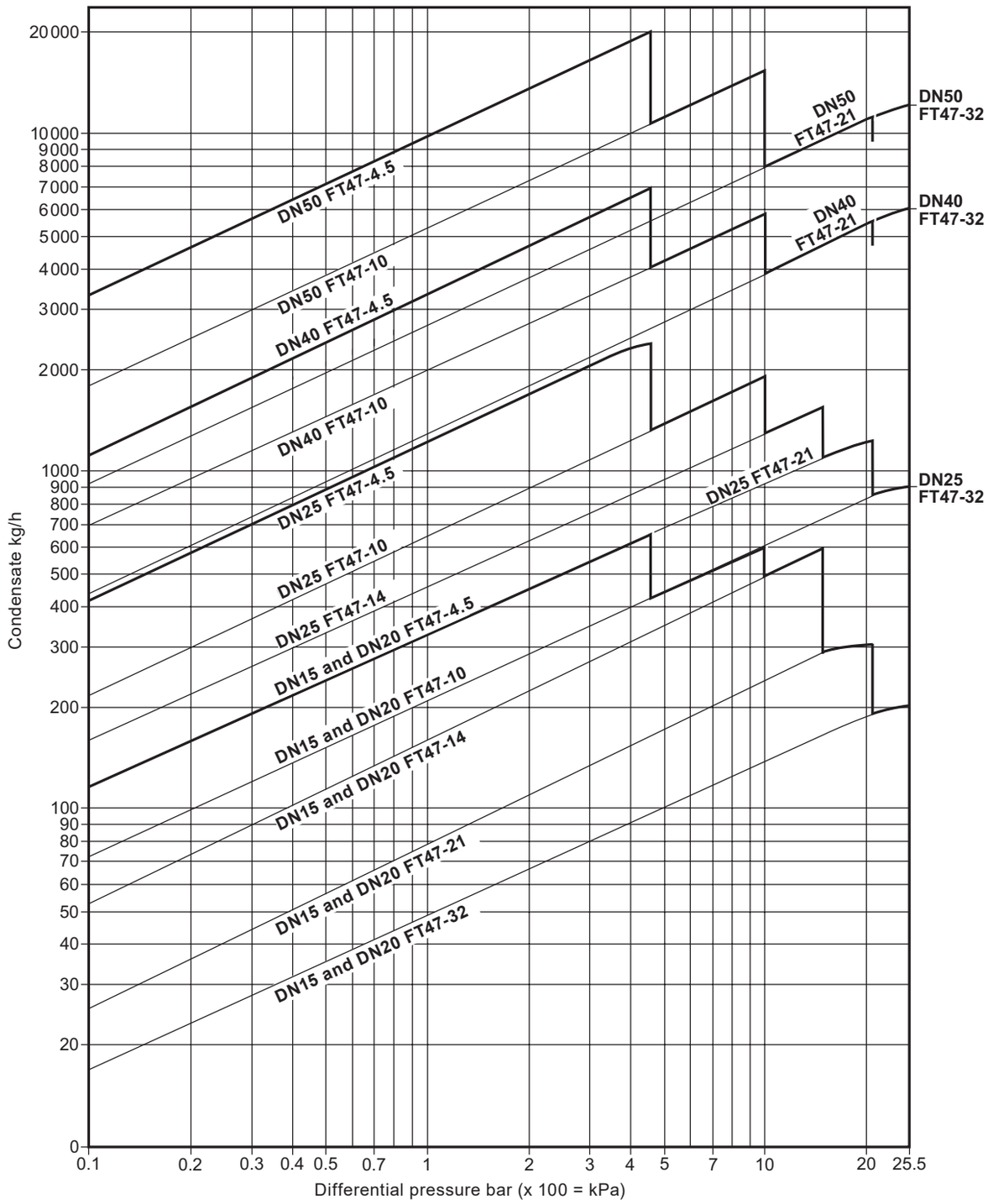
Capacities



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

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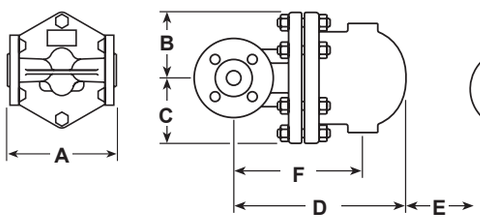
Steam traps
Ball float

Dimensions/weights (approximate) in mm and kg

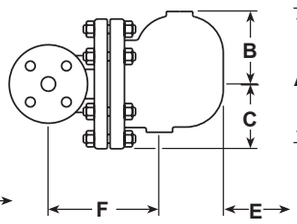
Size	A	B	C	D	E	F	Weight
DN15	150	80	80	215	120	155	10.8
DN20	150	80	80	225	120	165	10.8
DN25	160	115	85	276	170	215	15.0
DN40	230	130	115	326	200	200	33.0
DN50	230	141	123	332	200	236	34.0

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

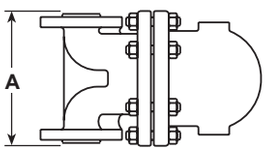
FT47
DN15 and DN20



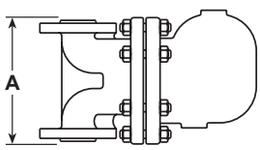
FT47
DN25, DN40 and DN50



FT47V
DN15 and DN20



FT47V
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 FT47 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 FT47-14 ball float steam trap, having an SG iron body and cover with thermostatic air vent. Connections are to be flanged to EN 1092 PN40.

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Spare parts

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

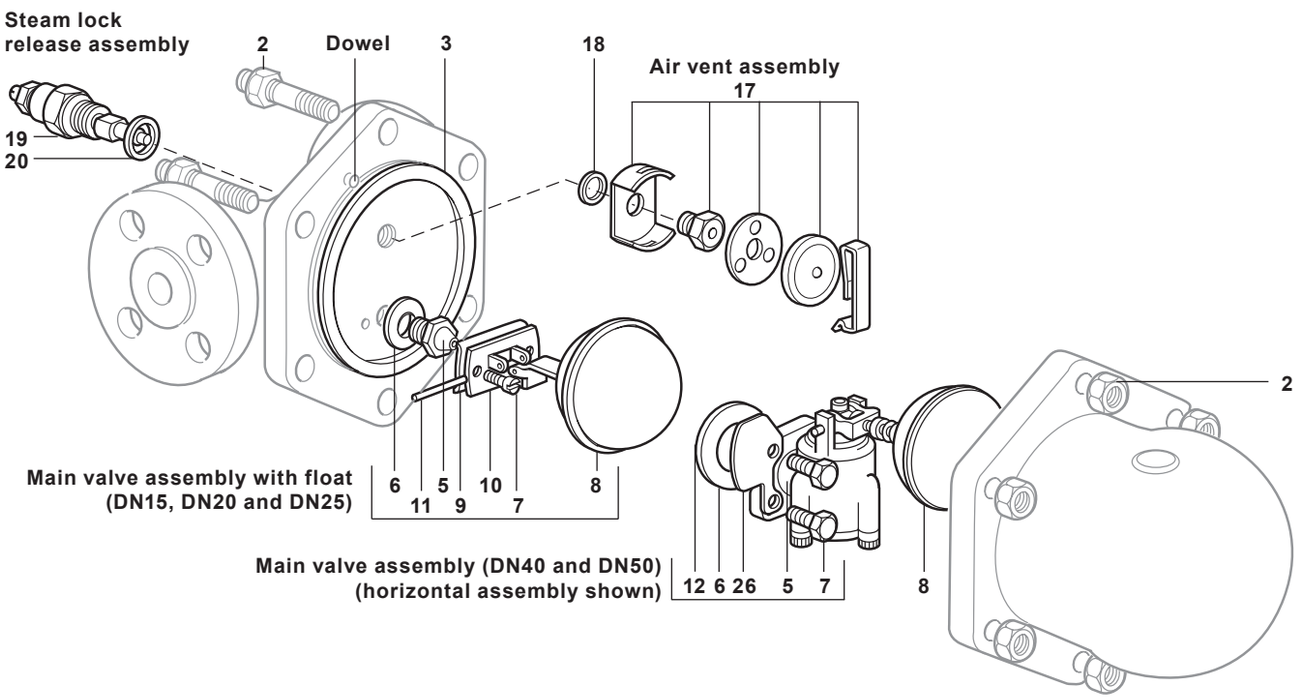
Available spares

Main valve assembly with float (DN15, DN20 and DN25 horizontal traps)*	**5, 6, 7, 8, 9, 10, 11**
Main valve assembly with integral erosion deflector (DN40 and 50) ** (specify horizontal or vertical trap)	**5, 6, 7, 12, 26**
Main valve assembly with float (DN15, DN20 and DN25 vertical traps only)	**5, 6, 7, 8, 9, 10, 11**
Ball float (DN40 and 50)	**8**
Air vent assembly	**17, 18**
Steam lock release and air vent assembly (FT47-C)	**17, 18, 19, 20, 21**
Complete set of gaskets (packet of 3 sets)	**3, 6, 18, 20, 21**

* On horizontal traps the erosion deflector on the DN15, DN20 and DN25 is pressed into the body during manufacture and not available as a spare.
** There is no erosion deflector on vertical traps in sizes DN40 and DN50.

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, including pressure range and orientation i.e.: horizontal or vertical connections.
Example: 1 - Air vent assembly for a Spirax Sarco DN20 FT47-21 ball float steam trap, with horizontal connections.



Recommended tightening torques

Item	Part	or mm		N m
	DN15, 20 and 25	17 A/F	M10 x 60	19 - 22
2	DN40	19 A/F	M16 x 85	60 - 66
	DN50	24 A/F	M16 x 85	80 - 88
5	DN15, 20 and 25	17 A/F		50 - 55

Item	Part	or mm		N m
	DN15, 20 and 25		M5 x 20	2.5 - 2.8
7	DN40	10 A/F	M6 x 20	10 - 12
	DN50	13 A/F	M8 x 20	20 - 24
17		17 A/F		50 - 55
19		22 A/F		50 - 55

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8 Steam traps
Ball float