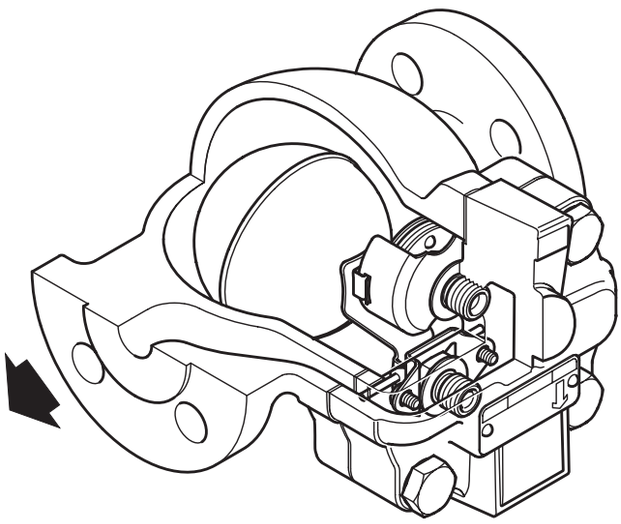
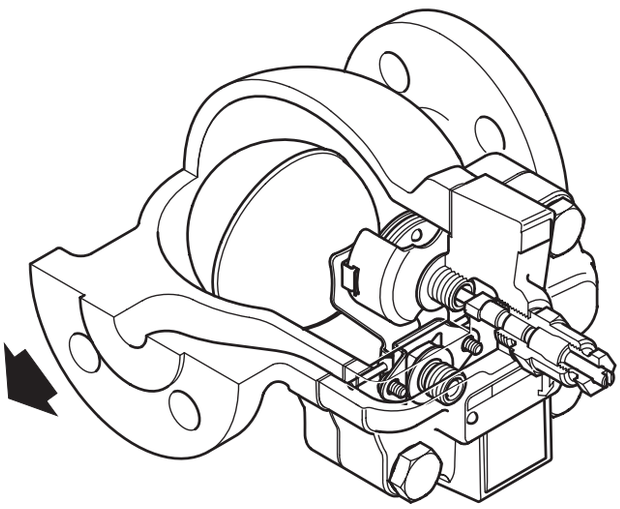
TI-P145-18
CMGT Issue 3

FTGS14
Ball Float Steam Trap (Flanged)



FTGS14 (R-L)



FTGS14-C (R-L)
(with optional SLR)

Description
The FTGS14 ball float steam trap has an austenitic stainless steel body, stainless steel working internals and integral automatic air venting facility. The SG iron cover is electroless nickel-plated offering increased resistance to erosion. The FTGS14 can be maintained without disturbing the pipework.

Available options

FTGS14 (R-L)	Horizontal connections with flow from right to left
FTGS14 (L-R)	Horizontal connections with flow from left to right
FTGS14V	Vertical connections with flow from top to bottom

Capsule
The BP99/32 capsule which is used in the FTGS14 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. **FTGS14-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.

An **integral strainer screen** (designated 'X' on the nomenclature i.e. **FTGS14X**) can be fitted to the trap.
For further information please consult Spirax Sarco.

Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED).

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.

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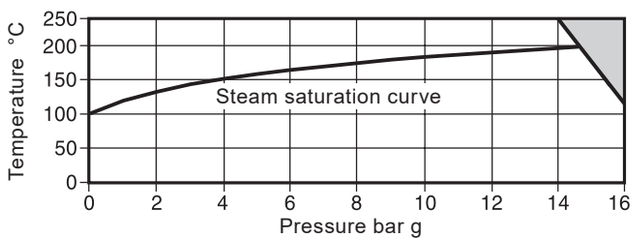
Sizes and pipe connections

½", ¾ and 1".
Flanged EN 1092 PN16, ASME (ANSI) 150 and JIS/KS 10.

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 @ 120 °C
TMA	Maximum allowable temperature		250 °C
Minimum allowable temperature			-10 °C
PMO	Maximum operating pressure for saturated steam service		14.6 bar g
TMO	Maximum operating temperature		250 °C @ 13.8 bar g
Minimum operating temperature			0 °C
ΔPMX	Maximum differential pressure	FTGS14-4.5	4.5 bar
		FTGS14-10	10 bar
		FTGS14-14	14 bar
Designed for a maximum cold hydraulic test pressure of:			24 bar g

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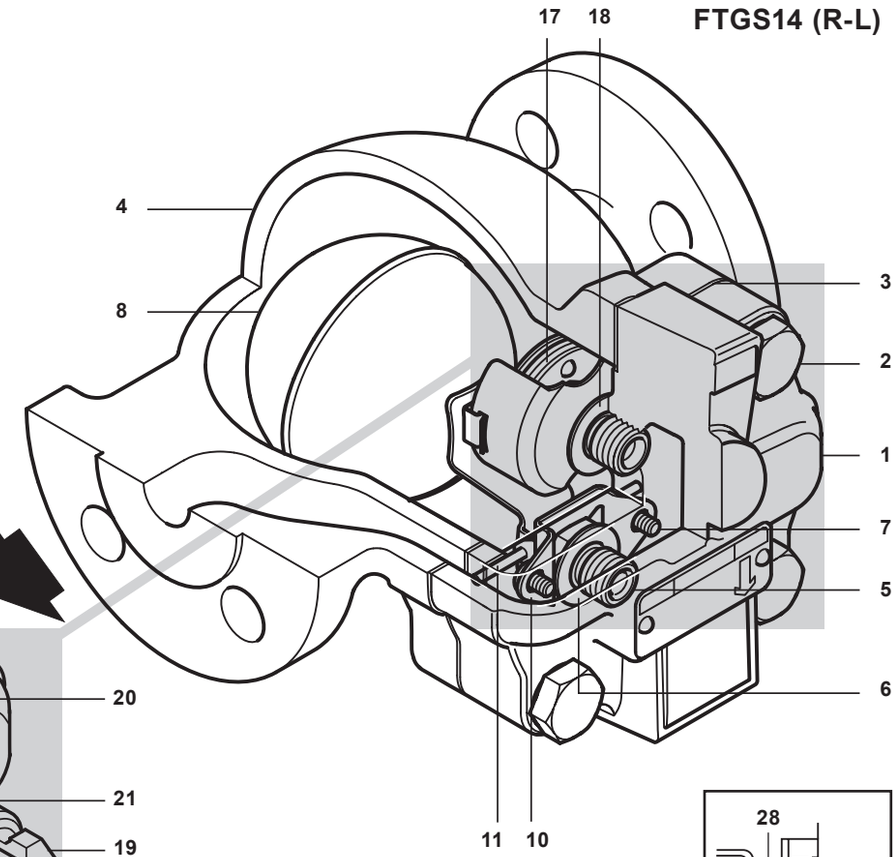
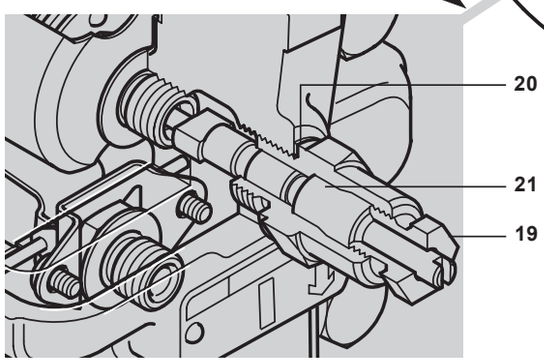
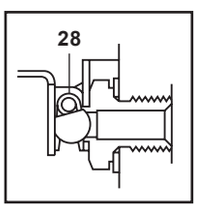
Materials

FTGS14 (R-L)



FTGS14-C (R-L)
(with optional SLR)





Main valve assembly 1"

No.	Part	Material	
1	Body	Austenitic stainless steel	EN 10213-4 (1.4308) ASTM A351 CF8
2	Cover bolts	Steel	
3	Cover gasket	Reinforced exfoliated graphite	
4	Cover	Electroless nickel plated SG iron	DIN 1693 GGG 40
5	Valve seat	Stainless steel	
6	Valve seat gasket	Stainless steel	
7	Pivot frame assembly screws	Stainless steel	
8	Ball float and lever	Stainless steel	
10	Pivot frame	Stainless steel	
11	Pivot pin	Stainless steel	
17	Air vent assembly	Stainless steel	
18	Air vent seat gasket	Stainless steel	
19	SLR assembly	Stainless steel	
20	SLR gasket	Stainless steel	
21	SLR seal	Graphite	
28	Valve spring (1" only)	Stainless steel	

Note: Due to regional manufacturing differences some standard versions may be supplied with a 'C' type body with a stainless steel plug and gasket. If this configuration is specifically required it must be specified at the time of order placement.

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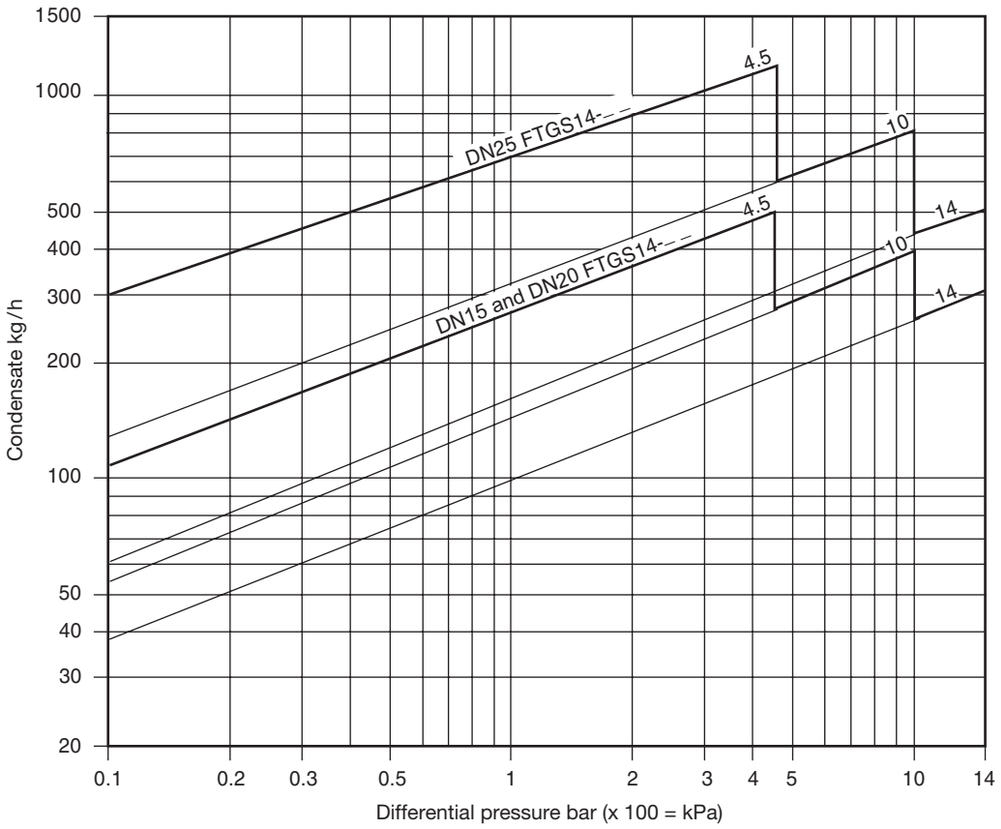
8 Steam traps
Ball float

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.

8.5
52

ΔP (bar)	0.5	1	2	3	4.5	7	10	14
	Minimum additional cold water capacity (kg/h)							
½" and ¾"	70	140	250	380	560	870	1 130	1 500
1"	120	240	360	500	640	920	1 220	1 500

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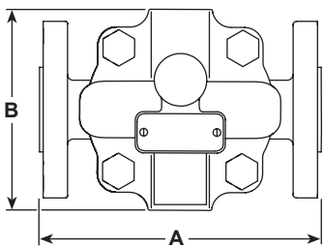
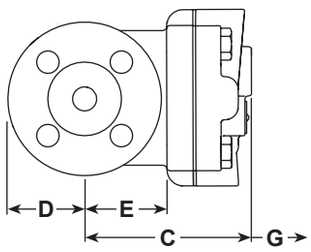
Dimensions/weights (approximate) in mm and kg

Size	A PN/ASME	A JIS/KS	B	B1	C	D	E	F	G Withdrawal distance	Weight
½"	150	150	107	96	102	50	47	38	105	4.7
¾"	150	150	107	96	102	53	47	38	105	5.2
1"	160	170	107	119	65	100	10	38	120	6.8

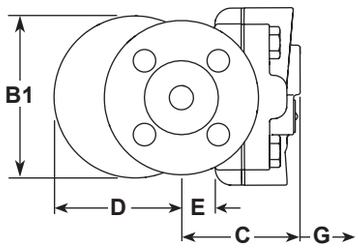
FTGS14



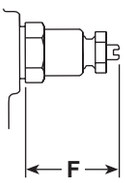
DN15 and DN20



DN25



FTGS14-C



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P145-12) supplied with the product.

Installation note

The FTGS14 must be installed with the direction of flow as indicated on the body and the arrow on the nameplate must point downwards with the float arm in a horizontal plane 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 ½" FTGS14-4.5 (L-R) ball float steam trap with screwed BSP connections and integral air vent.

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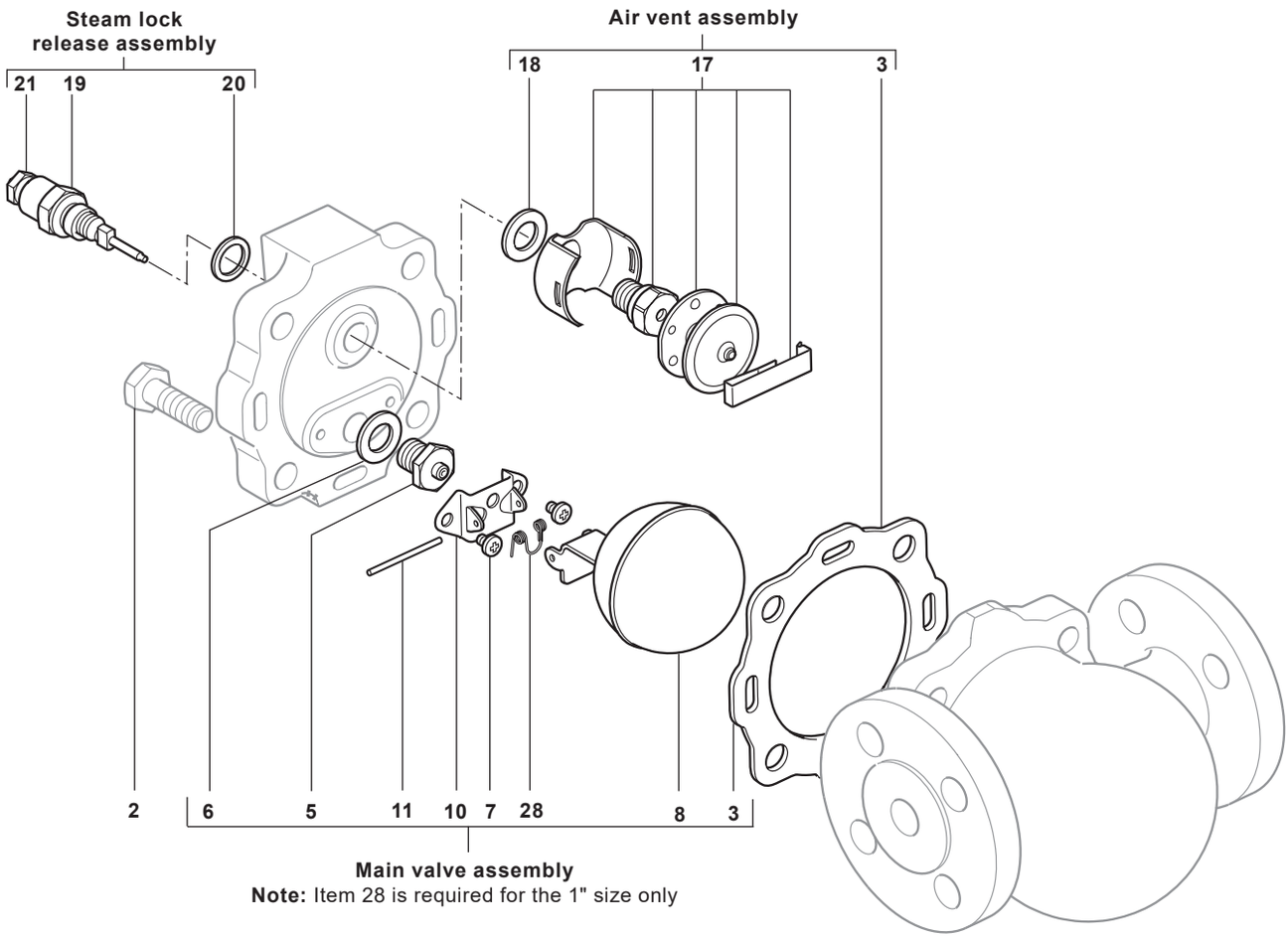
Steam traps
Ball float

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

Available spares

Maintenance kit	**3, 5, 6, 7 (2 off), 8, 10, 11, 17, 18, 28 (1" only)**
Main valve assembly with float	**3, 5, 6, 7 (2 off), 8, 10, 11, 28 (1" only)**
Air vent assembly	**3, 17, 18**
Manually adjustable needle valve (FTGS14-C only)	**19 + 21, 20**
Cover gasket (packet of 3)	**3**

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 ½" FTGS14-10 ball float steam trap.



Note: Item 28 is required for the 1" size only

Recommended tightening torques

Item	Part		or mm	N m	lbf ft
2	Cover bolts	17 mm A/F	M10 x 30	47 - 50	35 - 37
5	Main valve seat	17 mm A/F		50 - 55	37 - 40
7	Main valve assembly screws	Pozidrive	M4 x 6	2.5 - 3.0	1.8 - 2.2
17	Air vent assembly	17 mm A/F		50 - 55	37 - 40
19	SLR body	19 mm A/F		57 - 63	42 - 46
	SLR gland nut	13 mm A/F		3 - 5	2.2 - 3.7

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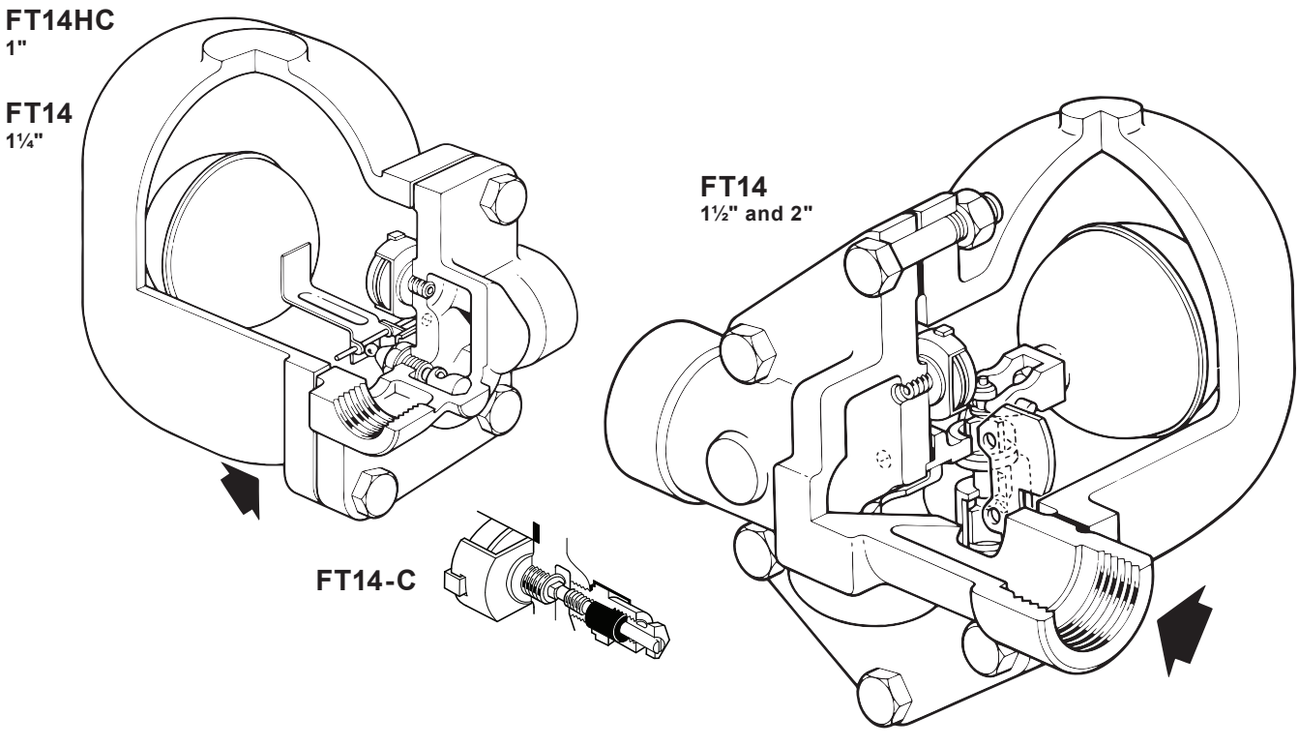
TI-S02-27
CMGT Issue 9

FT14 and FT14HC
SG Iron
Ball Float Steam Traps (1" HC, 1¼", 1½" and 2")



Description

The FT14 and FT14HC are iron bodied ball float steam traps having stainless steel working internals and integral automatic air venting facility. These traps are supplied with horizontal screwed connections only and can be maintained without disturbing the pipework. The flow direction is as indicated on the valve body.

Available types

FT14	Standard 1¼", 1½" and 2"
FT14HC	High capacity (1" only) - As standard the FT14HC is available with flow direction in either left-to-right or right-to-left direction. Please state preference when placing an order.

Note: These ball float steam traps are available with either 4.5, 10 or 14 bar internals (ΔPMX).

Capsule

The BP99/32 capsule which is used in the FT14 and FT14HC ball float steam traps is suitable for use on 150 °C superheat @ 0 bar g and 50 °C superheat @ 32 bar g.

Optional extras will only be supplied if specified at the point of order

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 **top of the cover can be drilled and tapped up to ⅜" BSP or NPT** for the purpose of fitting a balance line.

The **bottom of the cover can be drilled and tapped ⅜" BSP or NPT** for the purpose of fitting a drain cock.

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8

Steam traps
Ball float

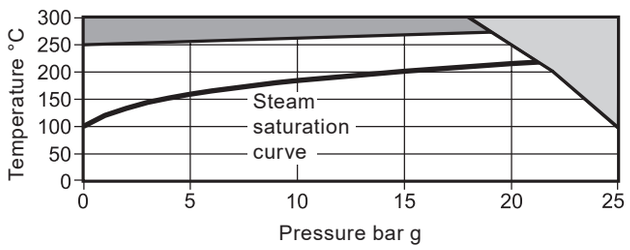
Standards
This product fully complies with the requirements of the Pressure Equipment Directive (PED).

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
1" (FT14HC only), 1¼", 1½" and 2" screwed BSP and NPT.

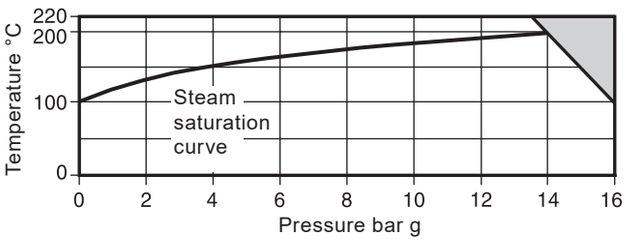
Pressure/temperature limits

PN25



FT14HC 1"
and
FT14 1¼"

PN16



FT14 1½" and 2"

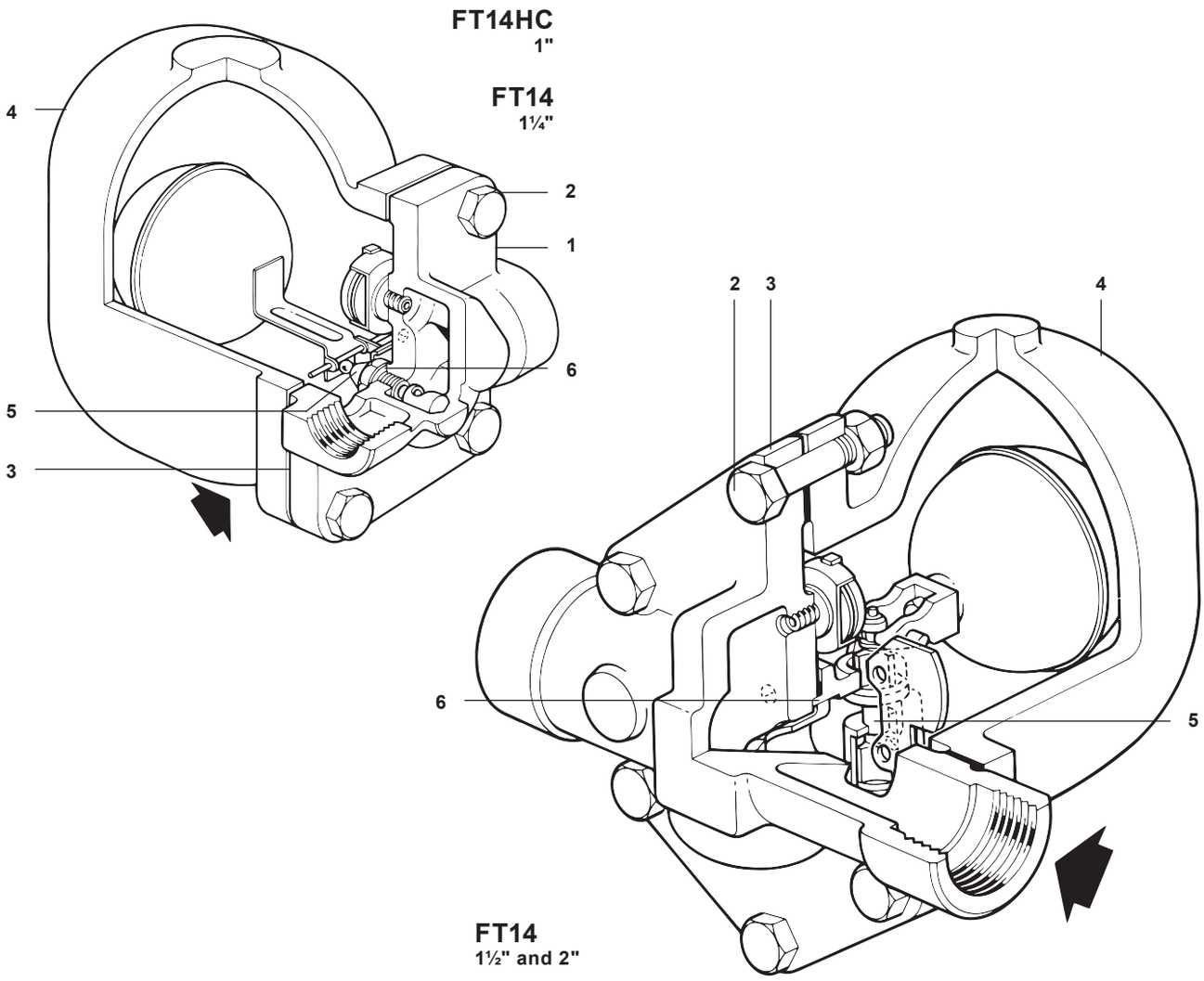
The product **must not** be used in this region.

The product should not be used in this region or beyond its operating range as damage to the internals may occur.

8.5
24

Size			1" HC and 1¼"		1½" and 2"
Body design conditions			PN25		PN16
PMA	Maximum allowable pressure		25 bar g @ 100 °C		16 bar g @ 100 °C
TMA	Maximum allowable temperature		300 °C @ 18 bar g		220 °C @ 13.5 bar g
Minimum allowable temperature			-10 °C		-10 °C
PMO	Maximum operating pressure for saturated steam service		21 bar g		14 bar g
TMO	Maximum operating temperature		275 °C @ 19 bar g		220 °C @ 13.5 bar g
Minimum operating temperature **Note:** For lower temperatures consult Spirax Sarco			0 °C		0 °C
ΔPMX	Maximum differential pressure	**Size**	**1" HC**	**1¼"**	**1½" and 2"**
		4.5 bar	FT14HC-4.5	FT14-4.5	FT14-4.5
		10 bar	FT14HC-10	FT14-10	FT14-10
		14 bar	FT14HC-14	FT14-14	FT14-14
Designed for a maximum cold hydraulic test pressure of:			38 bar g		24 bar g

Materials

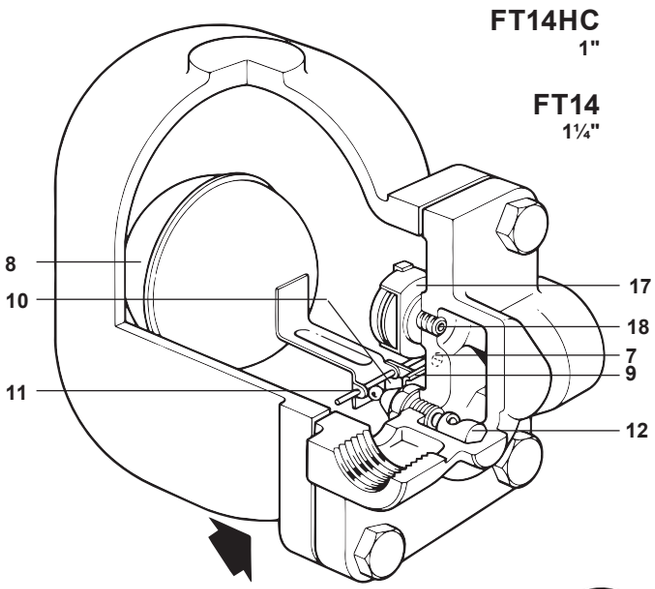


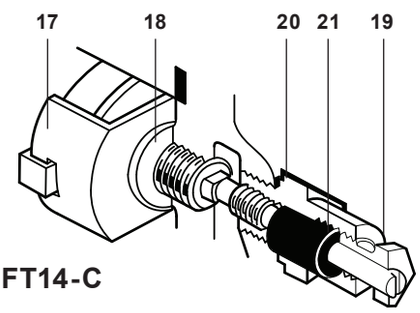
No.	Part		Material	
1	Body	1" and 1¼"	SG iron	BS EN 1563 JS 1030
		1½" and 2"	Cast iron	DIN 1691 GG 25
2	Cover bolts	1"	Steel	BS 3692 Gr. 8.8
	Cover bolts	1¼"	Steel	ASTM A193 B7
	Cover bolts & nuts	1½" and 2"	Steel	BS 3692 Gr. 8.8
3	Cover gasket		Reinforced exfoliated graphite	
4	Cover	1" and 1¼"	SG iron	BS EN 1563 JS 1030
		1½" and 2"	Cast iron	DIN 1961 GG 25
5	Valve seat	1" and 1¼"	Stainless steel	BS 970 431 S29
	Main valve assembly with erosion deflector	1½" and 2"	Stainless steel	BS 3146 Part 2 ANC 2
	Valve seat gasket	1" and 1¼"	Stainless steel	BS 1449 304 S11
6	Main valve assembly gasket	1½" and 2"	Reinforced exfoliated graphite	
	Pivot frame assembly set screws	1" and 1¼"	Stainless steel	BS 4183 18/8

Materials are continued on the next page

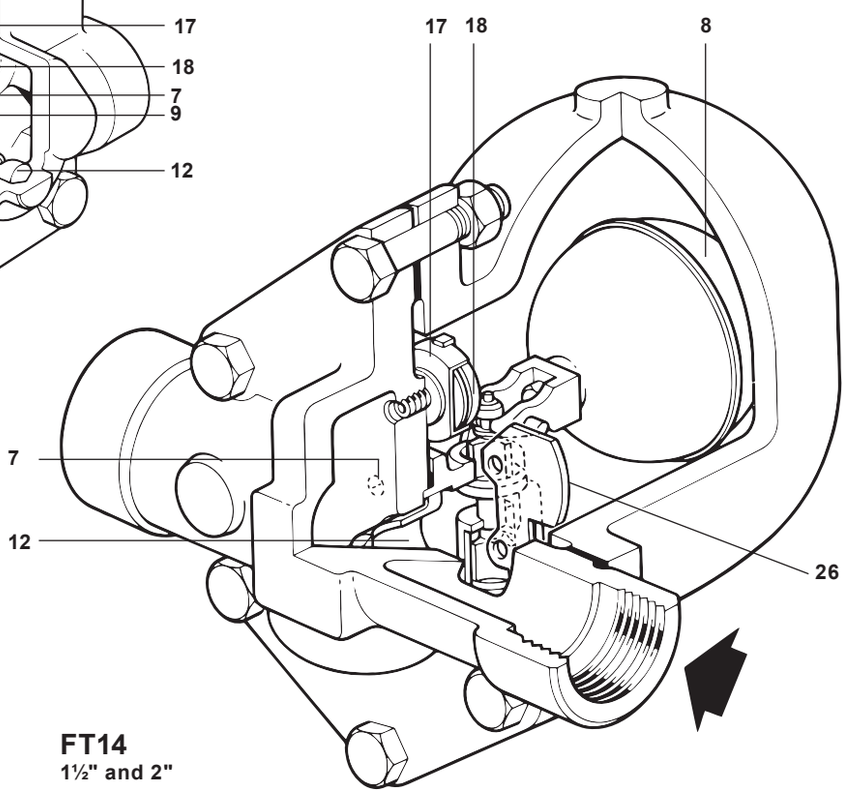
8 Steam traps
Ball float

Materials (continued)





FT14-C



FT14
1½" and 2"

8.5
26

No.	Part			Material	
7	Main valve assembly bolts	Bolts	1½"	Stainless steel	ISO 3506-2: A2-70
		Studs and nuts	2"	Stainless steel	BS 6105 A4-80
8	Ball float and lever			Stainless steel	BS 1449 304 S16
9	Support frame		1" and 1¼"	Stainless steel	BS 1449 304 S16
10	Pivot frame		1" and 1¼"	Stainless steel	BS 1449 304 S16
11	Pivot pin		1" and 1¼"	Stainless steel	
12	Erosion deflector			Stainless steel	BS 970 431 S29
17	Air vent assembly			Stainless steel	
18	Air vent seat gasket			Stainless steel	BS 1449 304 S11
19	SLR assembly			Stainless steel	BS 970 303 S21
20	SLR gasket			Mild steel	BS 1449 CS4
21	SLR seal			Graphite	
26	Inlet plate		1½" and 2" only	Stainless steel	BS 1449 304 S16

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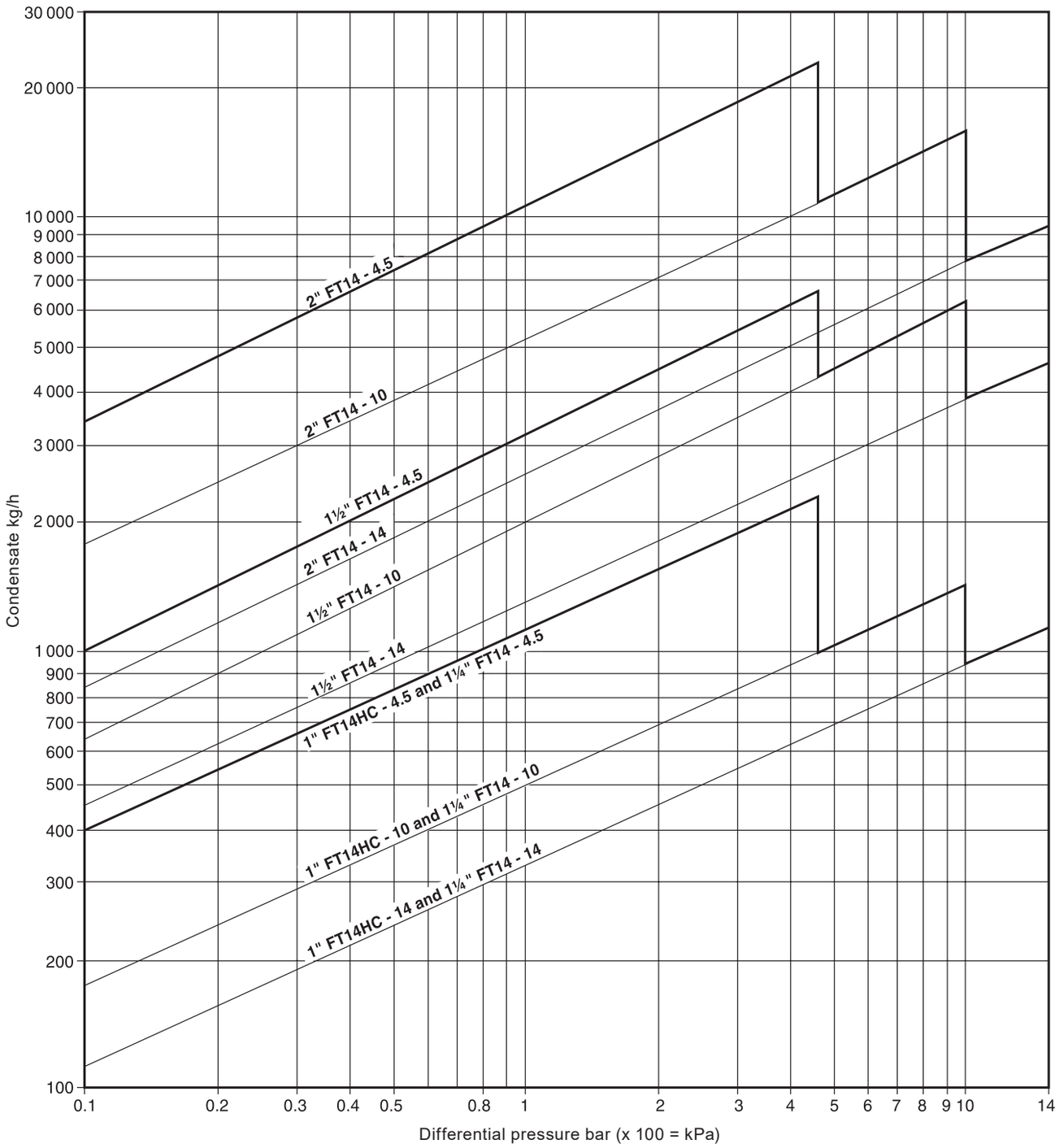
Capacities



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.

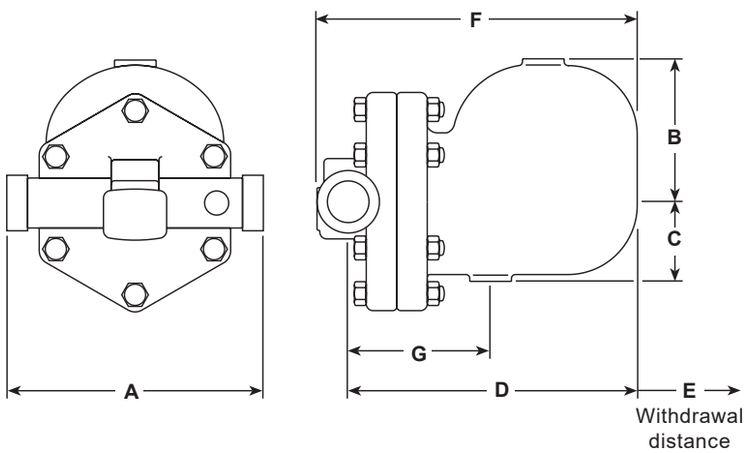
ΔP (bar)	0.5	1	2	3	4.5	7	10	14
	Minimum additional cold water capacity (kg/h)							
1" HC	580	600	650	670	700	1000	1300	1600
1¼, 1½" and 2"	580	600	650	670	700	1000	1300	1600

Steam traps
Ball float

Dimensions/weights (approximate) in mm and kg

Size	A	B	C	D	E	F	G	Weight
1" HC	120	110	80	195	160	220	115	6.8
1¼"	120	110	80	195	160	220	115	6.9
1½"	270	130	108	248	200	270	115	17.5
2"	300	138	125	250	200	288	140	22.0

1½" and 2" shown



Safety information, installation and maintenance
For full details see the Installation and Maintenance Instructions (IM-S02-30) 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 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 1" screwed BSP FT14HC-14 ball float steam trap having an SG iron body and cover, with thermostatic air vent - flow direction left-to-right. The cover is to be suitable for tapping ⅜" for drain/balance pipe connection.

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Spare parts

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

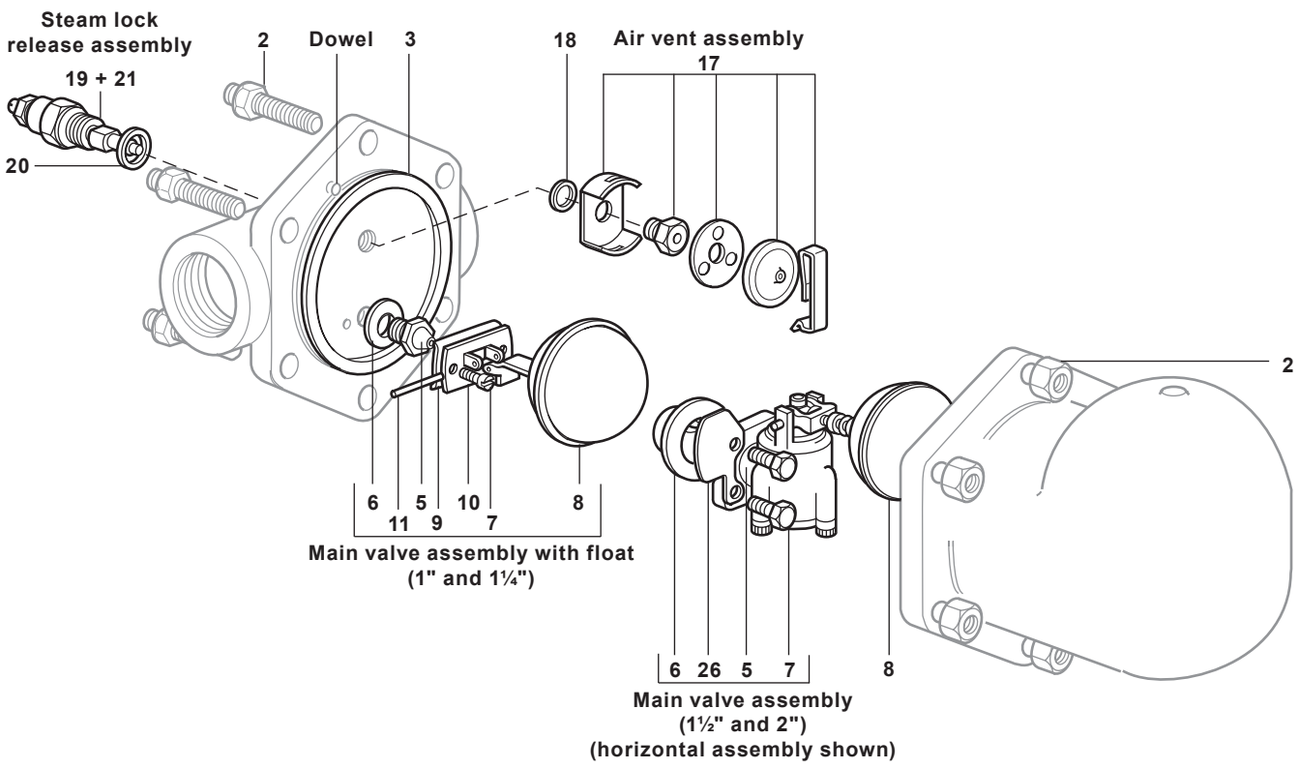
Available spares

Main valve assembly	with float (1" and 1¼"	**5, 6, 7, 8, 9, 10, 11**
	with erosion deflector (1½" and 2")	**5, 6, 7, 26**
Ball float (1½" and 2")		**8**
Air vent assembly		**17, 18**
Manually adjustable needle valve (SLR) and air vent assembly		**17, 18, 19, 20, 21**
Complete set of gaskets (packet of 3 sets)		**3, 6, 18, 20**

Note: The erosion deflector on the 1" and 1¼" is pressed into the body during manufacture and is not available as a spare.

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 - Air vent assembly for a Spirax Sarco 2" FT14-4.5 ball float steam trap.



Recommended tightening torques

Item	Size	or mm		N m
2	1"	17	M10 x 30	29-33
	1¼"	14*	M10 x 30	29-33
	1½"	19	M12 x 60	60-66
	2"	24	M16 x 70	80-88
5	1" and 1¼"	17	-	40-45

Item	Size	or mm		N m
7	1" and 1¼"	-	M5 x 20	10-12
	1½"	10	M6 x 20	10-12
	2"	13	M8 x 20	20-24
17	-	17	-	50-55
19	-	21	-	40-45

***Note:** Reduced A/F bolt head required

8 Steam traps
Ball float