Ball float steam traps

for pressures up to 32 bar

spirax sarco

The only ball float steam trap with over 50 years of experience and constant development

The Spirax Sarco FT is the product of experience. First launched in the 1940's the FT has become the most advanced ball float steam trap available.

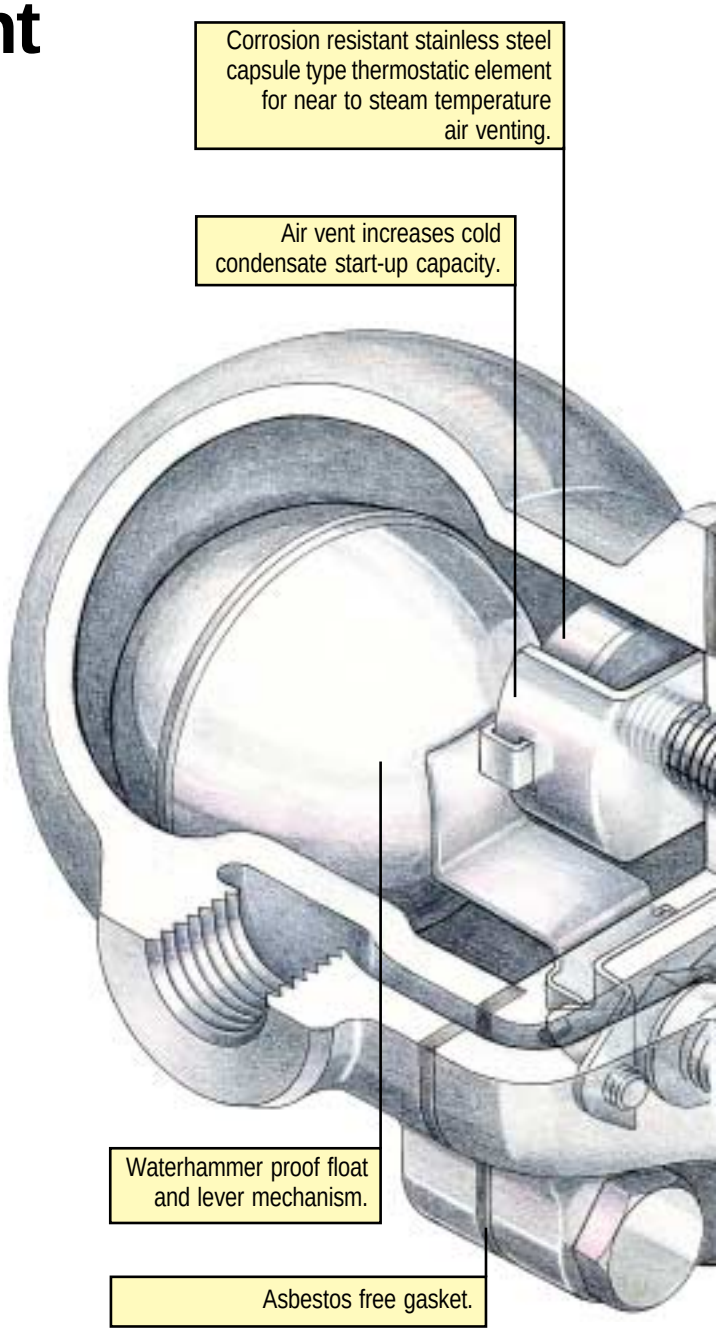
Constant design improvements have made today's FT an extremely robust steam trap, ideally suited to the rigorous demands of any steam system.

Unique amongst all ball float steam traps is the self-aligning main valve, waterhammer proof float assembly and corrosion resistant air vent.

Such attention to detail ensures complete shut-off at all pressures and reliable operation for extended product life and minimal maintenance.

Having an integral air vent and the options of a steam lock release (SLR) and drain cock tapping, the FT range is adaptable to all applications where ball float traps are recommended and instantaneous removal of condensate is required.

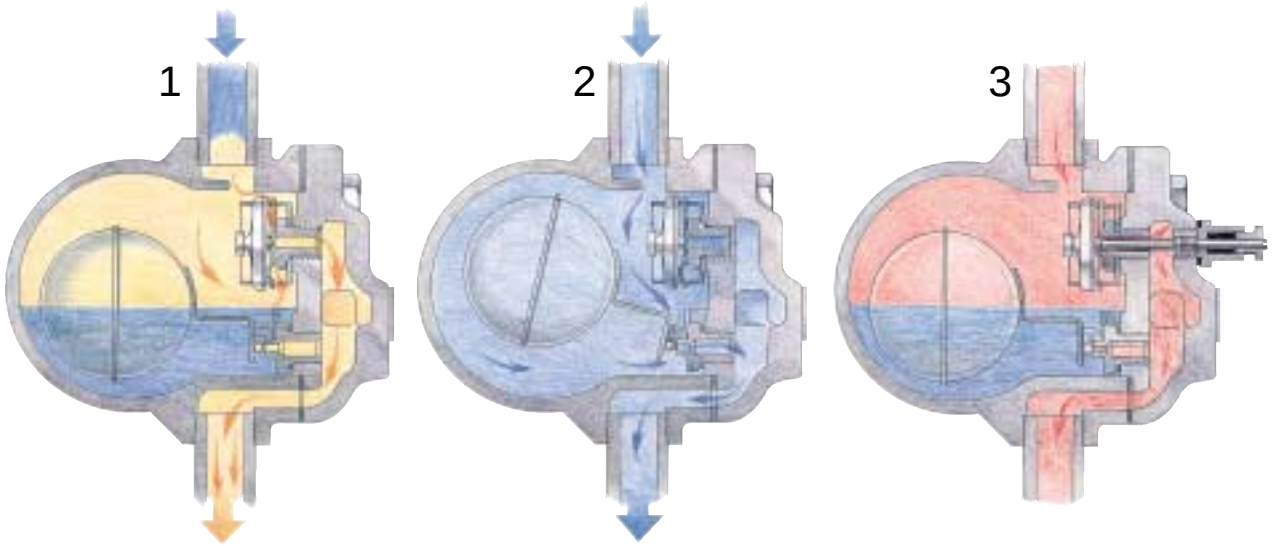
With over three and a half million Spirax Sarco FT traps supplied to over 100 000 customers the Spirax Sarco FT has become the most widely used ball float steam trap in the world today.

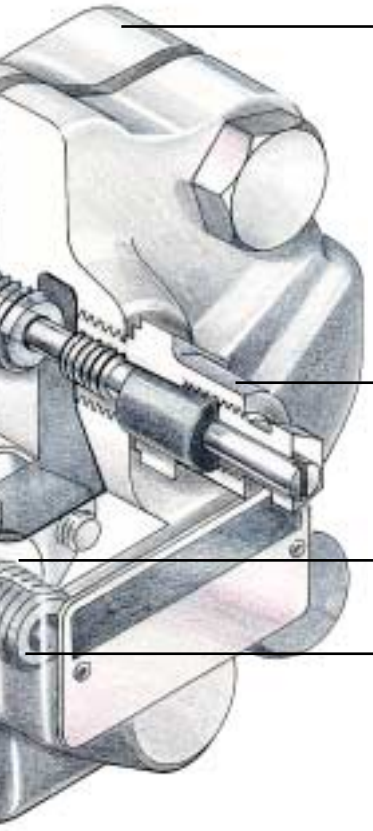


Range and options

Trap type	Body design rating	Size - DN								Connections			Material				Universal or vertical/ horizontal flow	ENP with strainer	C version with SLR	Drain cock tapping
		15	20	25	32	40	50	80	100	Screwed	Flanged	Socket weld	Cast iron	SG iron	Cast steel	Stainless steel				
FT14	PN16	●	●	●	●	●	●			●	●		●	●			●	●	●	●
FT14HC	PN25			●						●				●					●	●
FT43	PN16	●	●	●		●	●	●	●		●		●				●		●	●
FT47	PN40	●	●	●		●	●				●			●			●		●	●
FT450	ANSI 300		●	●		●	●	●	●	●	●	●			●				●	●
FT44	PN40	●	●	●		●	●	●	●		●				●		●		●	●
FT16	PN25	●	●							●						●			●	●
FT46	PN40	●	●	●		●	●				●					●			●	●

Note: SLR is not available on FT43 and FT44 DN80/DN100 and all vertical versions of FT43, FT44 and FT47.
32 bar versions of all float traps are only provided with a thermostatic air vent.





Cover can be rotated to suit pipework configuration (FT14 only). Others available in either horizontal or vertical orientation.

Steam lock release option.

Variety of seats optimises capacity at all pressures.

Self-aligning main valve.

Materials and pipe connections to suit every application.

FT14-C shown

How it works

On start-up a thermostatic air vent allows air to by-pass the main valve (1) which would otherwise be unable to escape (a condition known as 'air-binding')

As soon as condensate reaches the trap, the float is raised and the lever mechanism opens the main valve (2). Hot condensate closes the air vent but continues to flow through the main valve. When steam arrives the float drops and closes off the main valve, which remains at all times below the water level, ensuring that live steam cannot be passed.

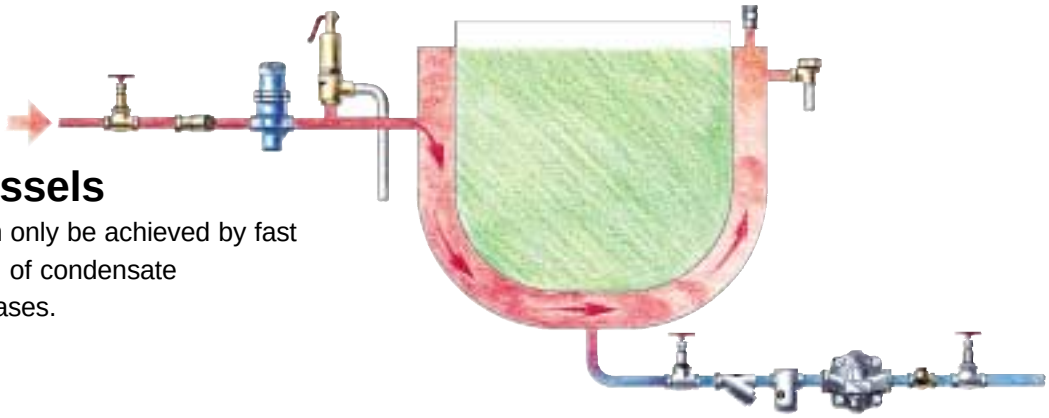
In syphon drip pipes draining rotating cylinders or long drain lines, a steam pocket may form which can prevent condensate from reaching the trap (a condition known as 'steam locking'). If this is likely, a steam lock release (SLR) should be specified to bleed away the steam (3).

User benefits

- Compact and lightweight reducing installation costs.
- Immediate discharge with clean tight shut-off. No back-up of condensate ensures maximum plant efficiency.
- Robust construction to guarantee long life against waterhammer and vibration.
- Can be installed in both horizontal and vertical positions reducing installation problems.
- Large discharge capacity in relation to size.
- Stainless steel internals that can tolerate corrosive condensate.
- Spirax Sarco's guarantee of technical back-up knowledge and service.

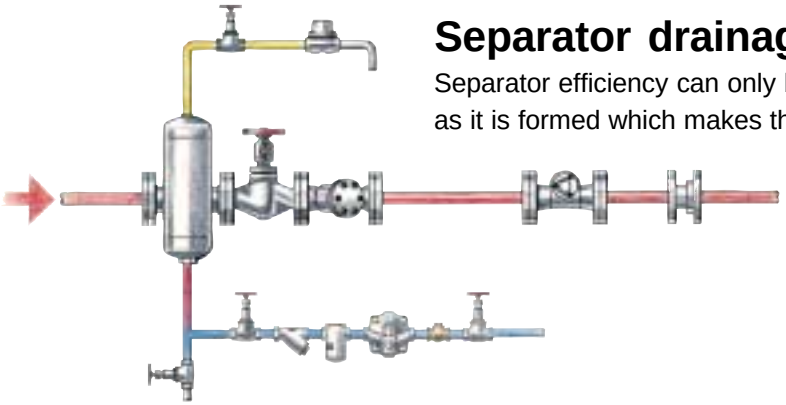
Typical applications

Ball float traps are the first choice for applications where the rate of heat transfer is high for the area of heating surface available: they are able to handle heavy or light condensate loads equally well and are not disturbed by wide and sudden fluctuations of pressures. Although compact in size, their discharge capacity is high and continuous ensuring maximum heat transfer: they are the best choice for draining both batch and continuous process plant with automatic temperature control. On all applications condensate is removed immediately it is formed.



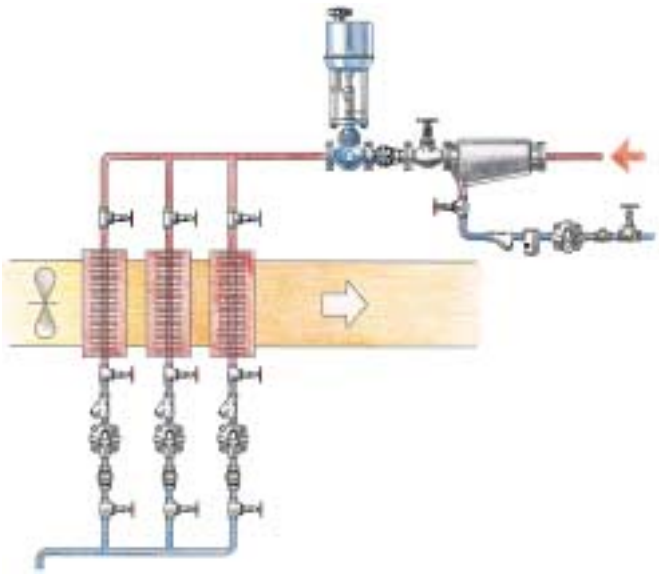
Jacketed vessels

High productivity can only be achieved by fast and efficient removal of condensate and incondensible gases.



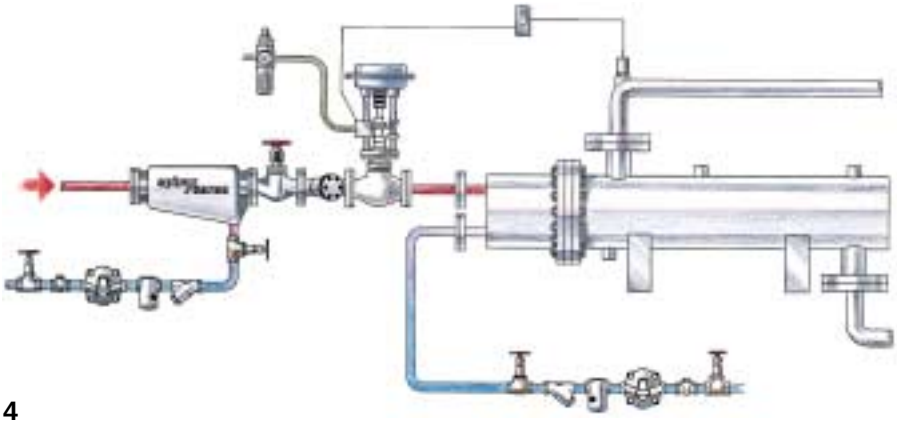
Separator drainage

Separator efficiency can only be maintained by removing condensate as it is formed which makes the float trap the ideal choice.



Unit heaters, heater batteries and driers

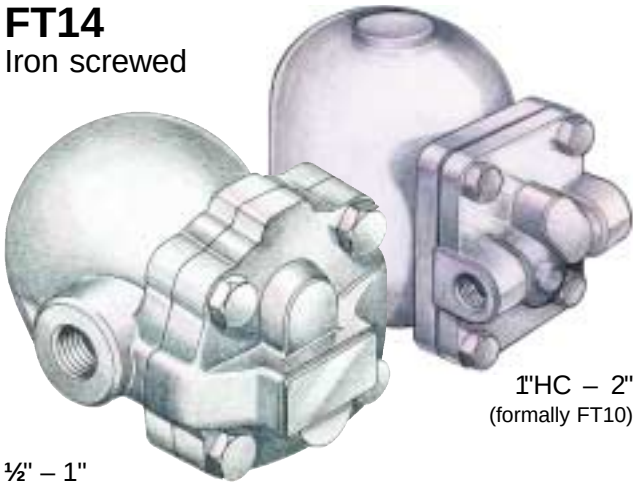
Since a large volume of condensate is produced from a small space, any accumulation of condensate or air causes uneven temperatures, poor control and corrosion. A float trap ensures efficient drainage when under positive differential pressure.



Heat exchangers

The float trap is ideal for handling a variable load normally associated with temperature controlled heat exchangers. Air and incondensible gases are also discharged efficiently to ensure rapid warm-up during start-up conditions.

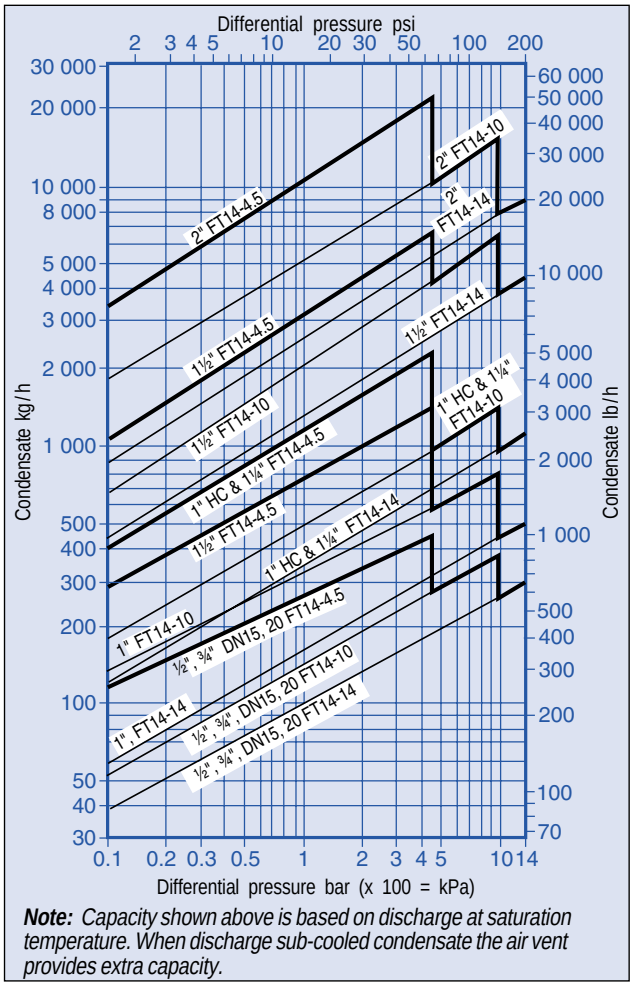
FT14
Iron screwed



1"HC – 2"
(formally FT10)

½" – 1"

Capacities



Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

Sizes and pipe connections

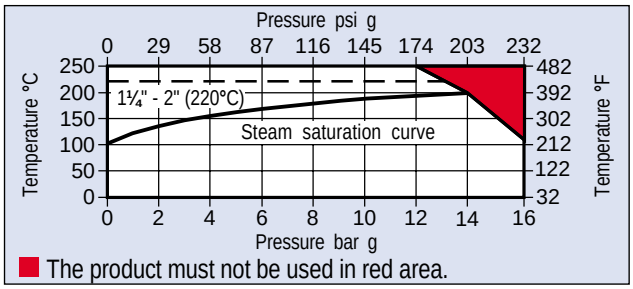
½", ¾", 1", 1¼", 1½", 2" screwed BSP or NPT
DN15, 20, 25 flanged BS 4504 PN16, ANSI 150 and JIS/KS 10
FT14 - ½", ¾", 1" (DN15, 20, 25) horizontal / vertical connection
FT14 - 1"HC, 1¼", 1½" 2" horizontal only (formally FT10)

Materials

Body/cover			
FT14	(½",¾", 1", 1"HC, 1¼")	SG iron	DIN 1693 GGG 40/40.3
	(1½", 2")	Cast iron	DIN 1691 GG25
Bolting		Steel BS 3692 Gr. 8.8/ASTM A193 B7	
Gasket		Reinforced exfoliated graphite	
Internals		Stainless steel	

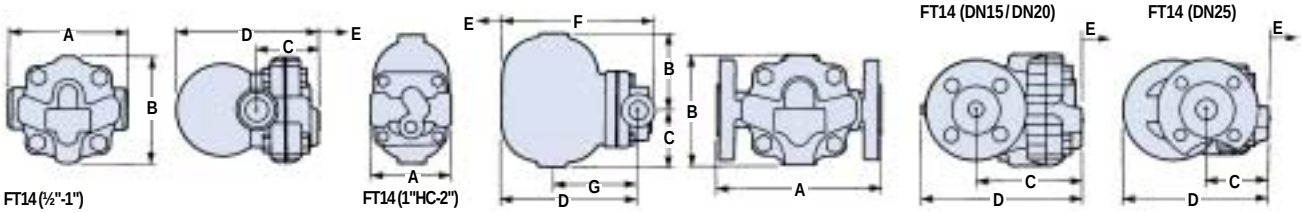
FT14X has an inbuilt strainer screen.

Operating range



Limiting conditions (ISO 6552)

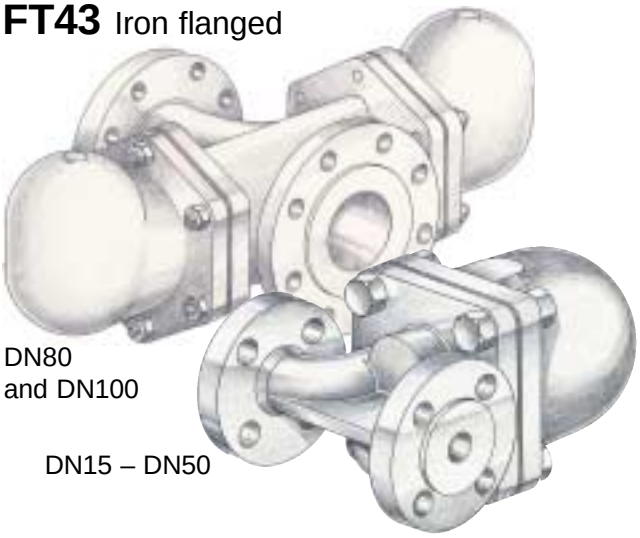
Body design conditions PN16
PMA - Maximum allowable pressure 16 bar g
TMA - Maximum allowable temperature: -
250°C (½",¾", 1", 1"HC) 220°C (1¼", 1½", 2")
Cold hydraulic test pressure 24 bar g
Maximum differential pressure (ΔPMX)
FT14 - 4.5 (4.5 bar) FT14 - 10 (10 bar) FT14 - 14 (14 bar)



Dimensions (approximate in millimetres)

Size	A	A PN/ANSI	A JIS/KS	B	C	D	E	F	G	Weight kg
½"	121	-	-	107	67	147	105	-	-	2.9
¾"	121	-	-	107	67	147	105	-	-	2.9
1"	145	-	-	107	75	166	110	-	-	4.0
1"HC	120	-	-	110	80	195	160	220	115	6.8
1¼"	120	-	-	110	80	195	160	220	115	6.8
1½"	270	-	-	130	108	238	200	270	115	17.5
2"	300	-	-	138	125	250	200	288	140	22.0
DN15	-	150	150	107	101	152	115	-	-	4.5
DN20	-	150	150	107	101	156	115	-	-	5.0
DN25	-	160	170	117	70	170	120	-	-	6.5

FT43 Iron flanged



DN80
and DN100

DN15 – DN50

Sizes and pipe connections

DN15, 20, 25, 40, 50, 80 and 100 flanged BS 4504 PN16
ANSI flanges available on request
DN15 - 50 horizontal / vertical connection
DN80 - 100 horizontal

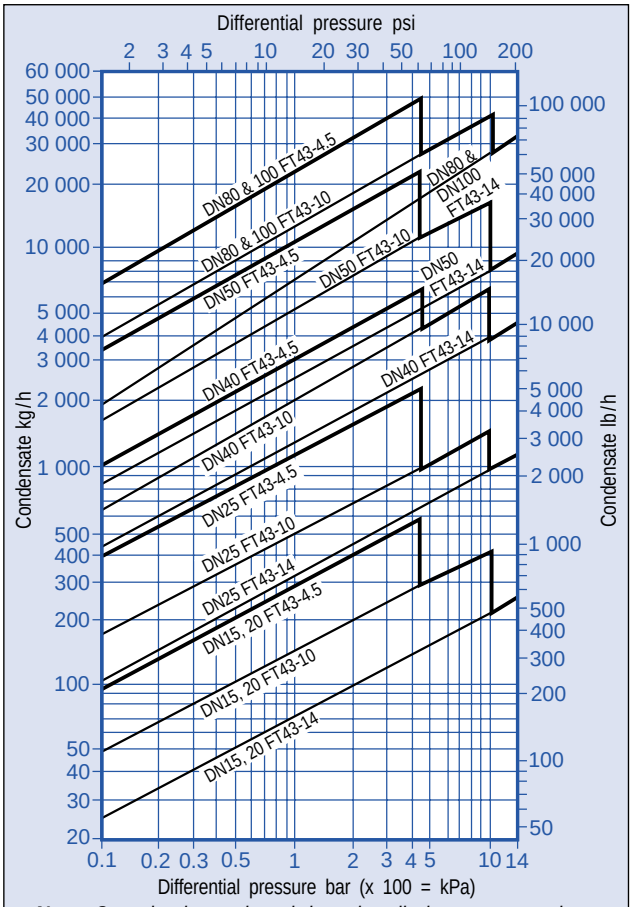
Materials

Body/cover	DN15 - 50	Cast iron	DIN 1691 GG25
	DN80 - 100	Cast iron	DIN 1691 GG20
Bolting	DN15 - 50	Steel	BS 3692 Gr. 8.8
	DN80 - 100	Steel	BS 3692 Gr. 8.8 and BS 4439 Gr. 8.8
Gasket		Reinforced exfoliated graphite	
Internals		Stainless steel	

Limiting conditions (ISO 6552)

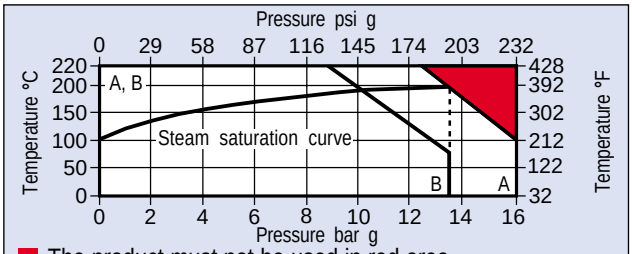
Body design conditions PN16
PMA - Maximum allowable pressure 16 bar g
TMA - Maximum allowable temperature 220°C
Cold hydraulic test pressure 24 bar g
Maximum differential pressure (Δ PMX)
FT43 - 4.5 (4.5 bar) FT43 - 10 (10 bar) FT43 - 14 (14 bar)

Capacities

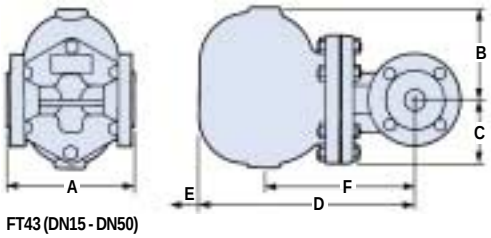


Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

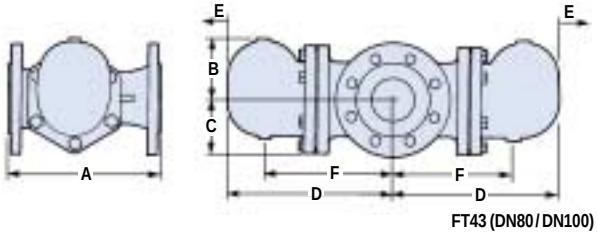
Operating range



The product must not be used in red area
A - A Flanged BS 4504 PN16
B - B Flanged ANSI 150 flat face (DN15, 20, 80 and 100), ANSI 125 (DN25 - 50)



FT43 (DN15 - DN50)

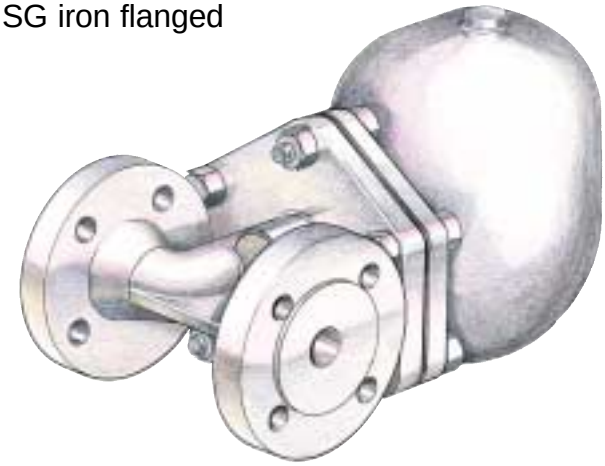


FT43 (DN80 / DN100)

Dimensions (approximate in millimetres)

Size	A	B	C	D	E	F	Weight (kg)
DN15	150	54	54	188	110	155	5.5
DN20	150	54	54	195	110	165	5.5
DN25	160	110	80	245	160	215	8.3
DN40	230	128	110	330	200	200	21.5
DN50	230	140	126	340	200	225	21.5
DN80	350	140	123	387	200	310	72.0
DN100	350	140	123	387	200	310	74.0

FT47 DIN specification
SG iron flanged



Sizes and pipe connections

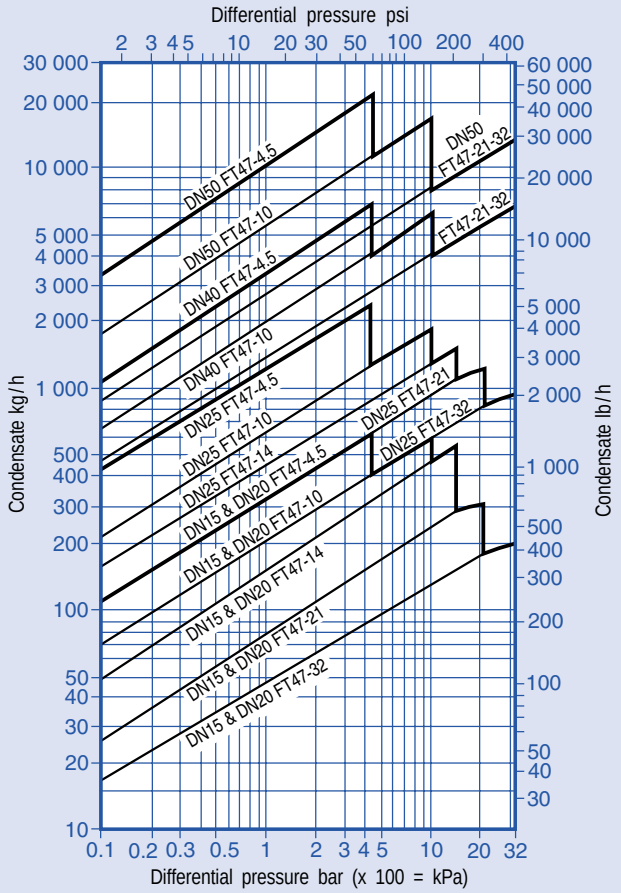
DN15, 20, 25, 40 and 50 flanged BS 4504 PN40
ANSI flanges available on request

Materials

Body/cover	SG iron	DIN 1693 GGG 40.3
Bolting	Steel	DIN 17240 21 Cr Mo V57
Gasket	Reinforced exfoliated graphite	
Internals	Stainless steel	

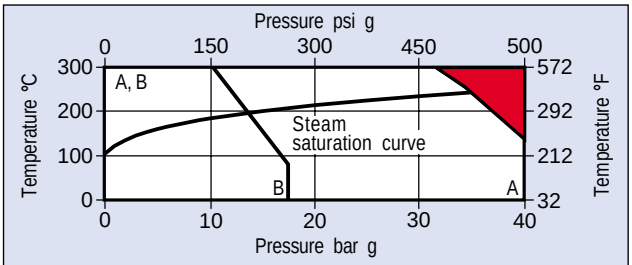
Body and cover from TÜV approved foundry.

Capacities



Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

Operating range

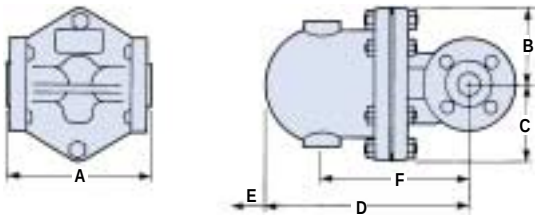


The product must not be used in red area
A - A Flanged BS 4504 PN40
B - B Flanged ANSI 150

Limiting conditions (ISO 6552)

Body design conditions PN40
PMA - Maximum allowable pressure 40 bar g
TMA - Maximum allowable temperature 300°C
Cold hydraulic test pressure 60 bar g
Maximum differential pressure (Δ PMX)

DN	FT47-4.5	FT47-10	FT47-14	FT47-21	FT47-32
15,20,25	4.5 bar	10 bar	14 bar	21 bar	32 bar
40,50	4.5 bar	10 bar	-	21 bar	32 bar



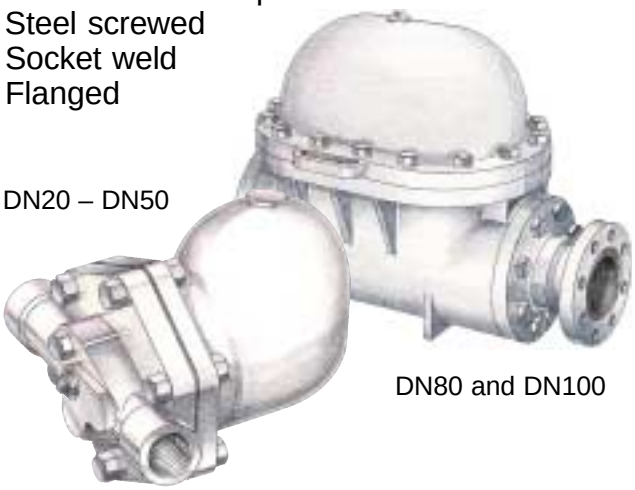
Dimensions (approximate in millimetres)

Size	A	B	C	D	E	F	Weight (kg)
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

FT450 ASTM specification

Steel screwed
Socket weld
Flanged

DN20 – DN50



DN80 and DN100

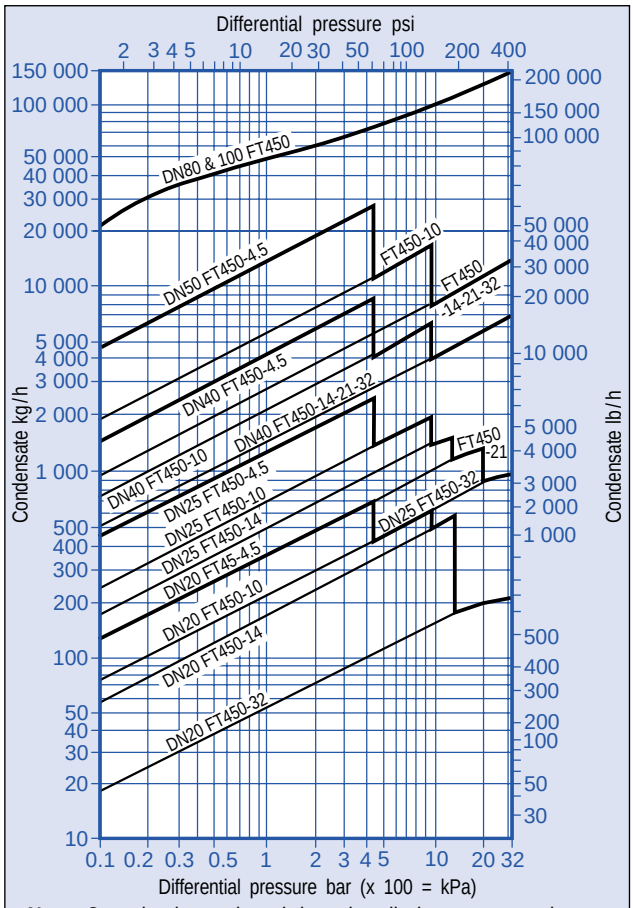
Sizes and pipe connections

DN20, 25, 40, 50, 80 and 100 screwed NPT,
socket weld, flanged BS 1560 class 150, 300 or 600

Materials

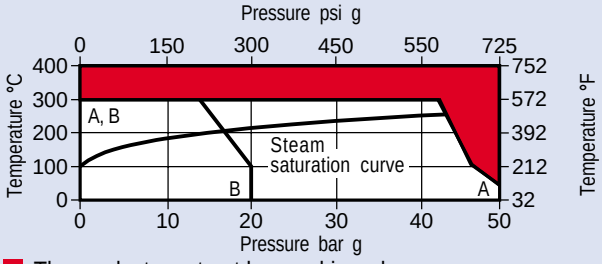
Body/cover	Steel	ASTM A216 WCB
Bolting	Steel	ASTM A193 B7 and A194 2H
Gasket	Reinforced exfoliated graphite	
Internals	Stainless steel	

Capacities



Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

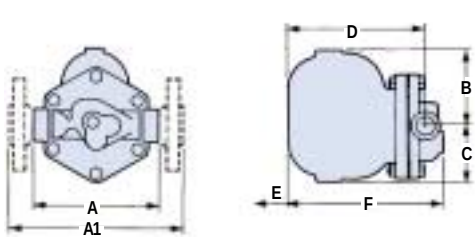
Operating range



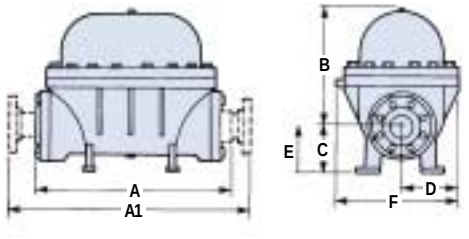
The product must not be used in red area.
A - A Screwed, socket weld, flanged ANSI 300 and 600
B - B Flanged ANSI 150

Limiting conditions (ISO 6552)

Body design conditions ANSI 300
PMA - Maximum allowable pressure 50 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 75 bar g
Maximum differential pressure (Δ PMX)
FT450-4.5 (4.5 bar) FT450-10 (10 bar) FT450-14 (14 bar)
FT450-21 (21 bar) FT450-32 (32 bar)



FT450 (DN20 - DN50)

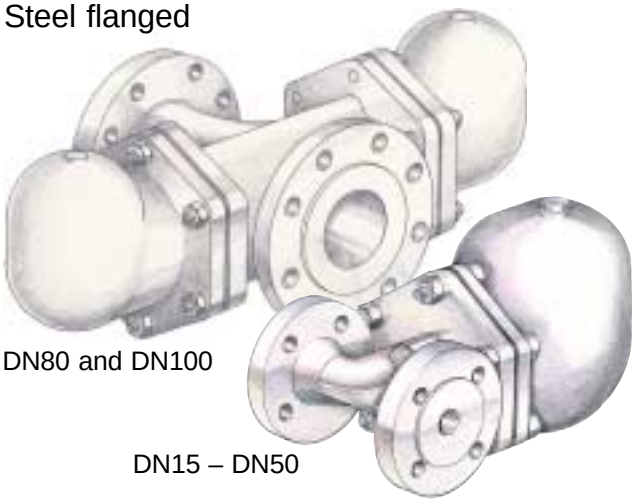


FT450 (DN80 / DN100)

Dimensions (approximate in millimetres)

Size	A	A1	B	C	D	E	F	Weight (kg)
DN20	155	255	65	65	163	120	189	10.8
DN25	165	257	115	84	208	160	234	15.0
DN40	250	356	130	80	250	195	282	29.0
DN50	300	406	141	90	255	195	295	32.0
DN80	705	988	431	171	203	813	444	220.0
DN100	-	988	431	171	203	813	444	220.0

FT44 DIN specification
Steel flanged



DN80 and DN100

DN15 – DN50

Sizes and pipe connections

DN15, 20, 25, 40, 50, 80 and 100 flanged BS 4504 PN40, BS 1560 class 150 or 300
DN15 - 50 horizontal / vertical connection
DN80 - 100 horizontal

Materials

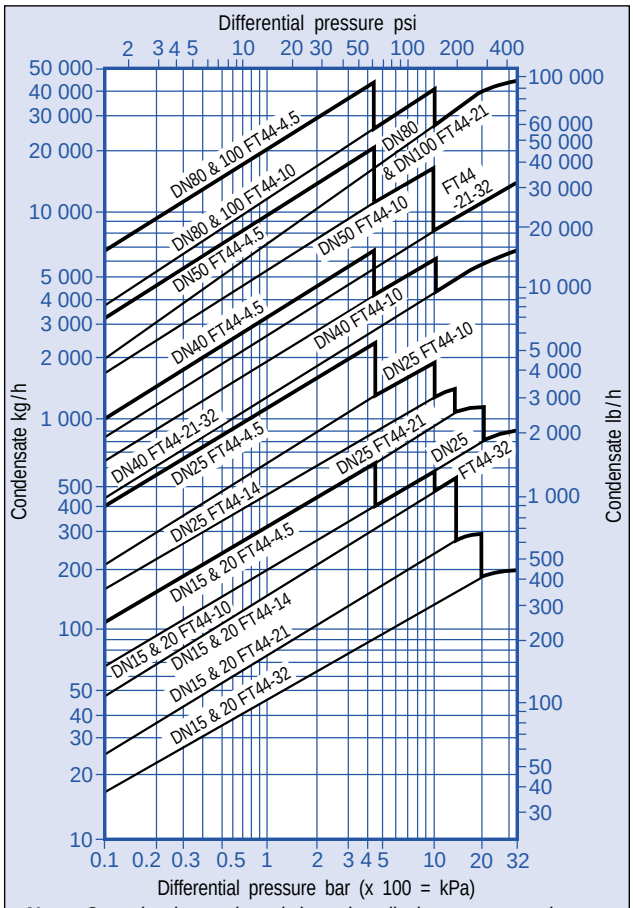
Body/cover		Steel	DIN 17245 GS-C25N
Bolting	DN15 - 50	Steel	DIN 17240 21 Cr MoV57 and 24 Cr Mo5
	DN80 - 100	Steel	BS 4439 B7 and BS 3692 2H
Gasket		Reinforced exfoliated graphite	
Internals		Stainless steel	

Body and cover from TÜV approved foundry.

Limiting conditions (ISO 6552)

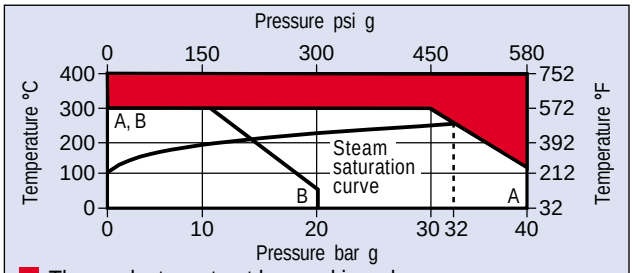
Body design conditions PN40
PMA - Maximum allowable pressure 40 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 60 bar g
Maximum differential pressure (Δ PMX)
FT44-4.5 (4.5 bar) FT44-10 (10 bar) FT44-14 (14 bar)
FT44-21 (21 bar) FT44-32 (32 bar)

Capacities

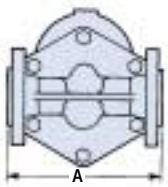


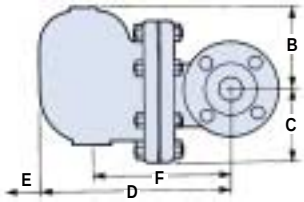
Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

Operating range

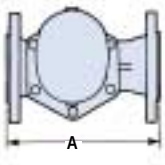


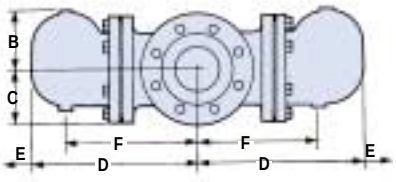
The product must not be used in red area
A - A Flanged ANSI 300, PN40
B - B Flanged ANSI 150





FT44 (DN15 - DN50)



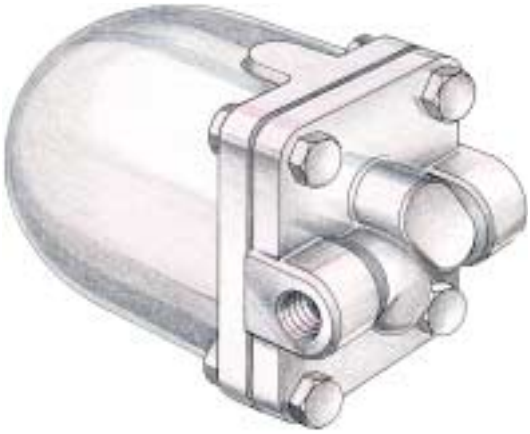


FT44 (DN80 and DN100)

Dimensions (approximate in millimetres)

Size	A Cl.300	A Cl.150	A PN40	B	C	D	E	F	Weight (kg)
DN15	209	203	150	80	80	215	120	155	10.8
DN20	209	205	150	80	80	225	120	165	10.8
DN25	212	208	160	115	85	282	170	215	15.0
DN40	327	321	230	130	115	337	200	200	33.0
DN50	320	313	230	141	123	347	200	225	43.0
DN80	373	373	373	140	123	340	200	310	95.0
DN100	366	350	350	140	123	390	200	310	97.0

FT16 Austenitic stainless steel Screwed



Sizes and pipe connections

½", ¾" and 1" screwed BSP or NPT
FT16 - horizontal connection

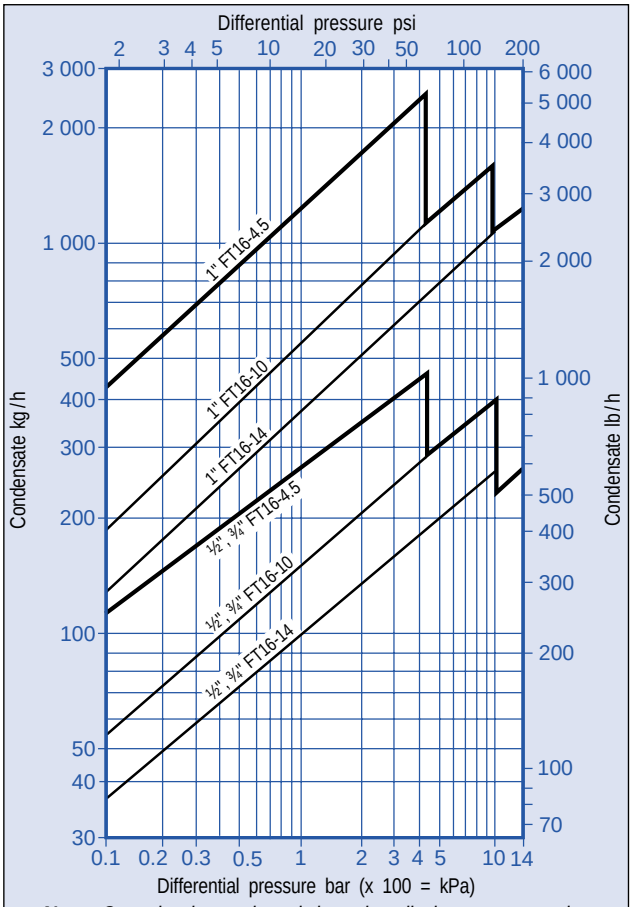
Materials

Body/cover	Stainless steel	AISI 316L
Bolting	Stainless steel	A2 Gr. 80
Gasket	Austenitic stainless steel	
Internals	Stainless steel	

Limiting conditions (ISO 6552)

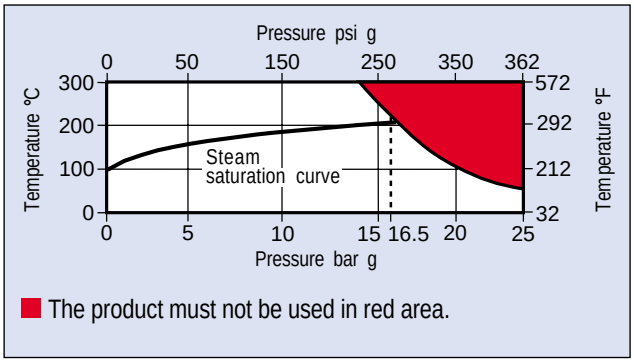
Body design conditions PN25
PMA - Maximum allowable 25 bar g
TMA - Maximum allowable temperature 300°C
Cold hydraulic test pressure 38 bar g
Maximum differential pressure (Δ PMX)
FT16-4.5 (4.5 bar) FT16-10 (10 bar) FT16-14 (14 bar)

Capacities

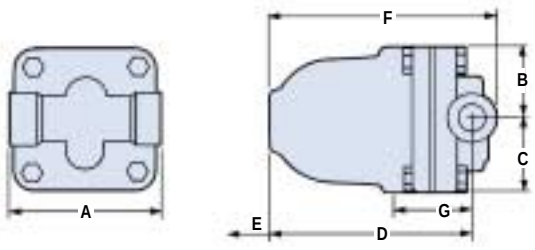


Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

Operating range



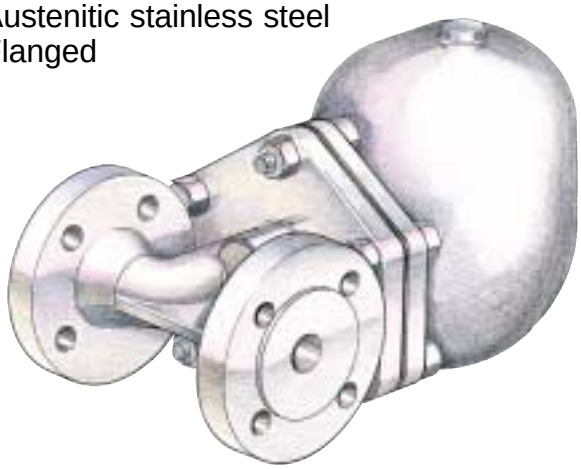
The product must not be used in red area.



Dimensions (approximate in millimetres)

Size	A	B	C	D	E	F	G	Weight (kg)
½"	120	54	54	148	110	169	45	4.0
¾"	120	54	54	148	110	169	45	4.0
1"	120	110	80	195	160	220	115	6.8

FT46 DIN specification
Austenitic stainless steel
Flanged



Sizes and pipe connections

DN15, 20, 25, 40 and 50 flanged BS 4504 PN40
ANSI flanges available on request
FT46 –horizontal connection

Materials

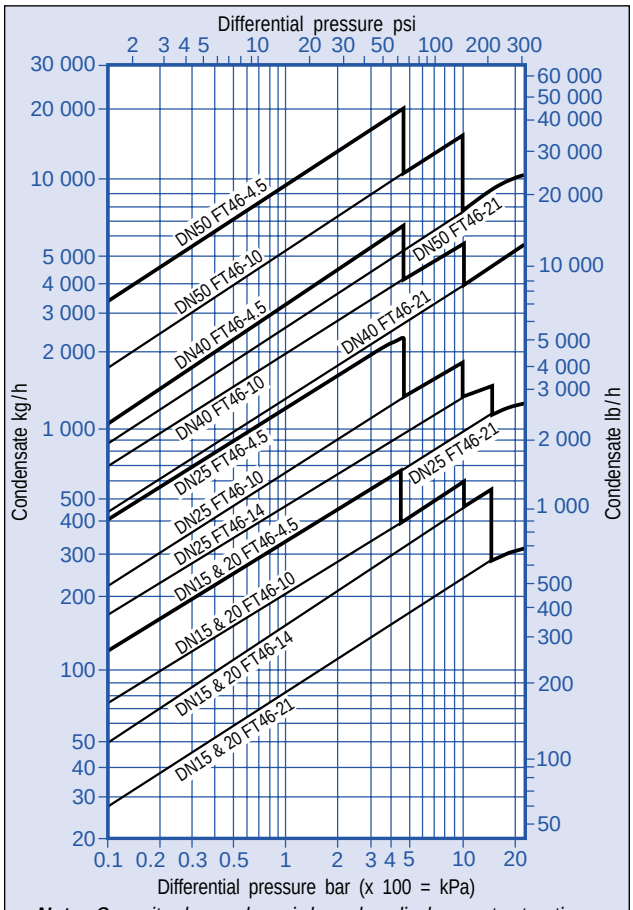
Body/cover	Stainless steel	AISI 316
Bolting	Stainless steel	A2 Gr. 80
Gasket	Austenitic stainless steel	
Internals	Stainless steel	

Body and cover from TÜV approved foundry.

Limiting conditions (ISO 6552)

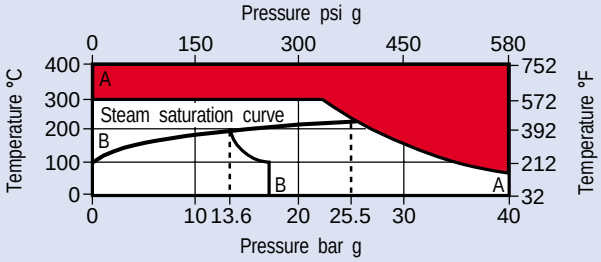
Body design conditions PN40
PMA - Maximum allowable pressure 40 bar g
TMA - Maximum allowable temperature 400°C
Cold hydraulic test pressure 60 bar g
Maximum differential pressure (Δ PMX)
FT46-4.5 (4.5 bar) FT46-10 (10 bar) FT46-14 (14 bar)
FT46-21 (21 bar)

Capacities

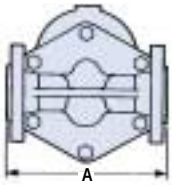


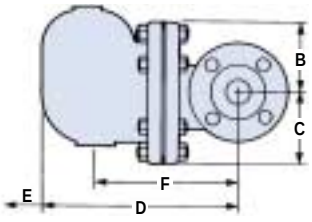
Note: *Capacity shown above is based on discharge at saturation temperature. When discharge sub-cooled condensate the air vent provides extra capacity.*

Operating range



The product must not be used in red area
A - A Flanged ANSI 300, PN40
B - B Flanged ANSI 150





Dimensions (approx. in millimetres)

Size	A	B	C	D	E	F	Weight (kg)
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

Installation

Float traps should be installed as close to the drain outlet as possible, with the float arm horizontal and with the direction of flow as indicated on the body. A strainer should be fitted in front of the trap. If exposed to freezing conditions, they should always be lagged or drained.

Options

SLR (Steam lock release):- a manually adjustable needle valve for applications where traps are subject to steam locking.

Drain cock tapping:- the cover can be drilled and screwed ⅜" for the purpose of fitting a drain cock (½" on FT14).

Steam trap leakage detection:- for automatically monitoring steam trap performance consider the use of Spiratec. Separate literature is available on request.

Typical specification

The steam traps shall be Spirax Sarco FT14 float and lever design having an in-built stainless steel capsule type air vent. The trap shall be manufactured in SG iron to grade GGG 40 and have connections screwed ½" BSP. The trap shall be capable of operating with a maximum differential pressure of 14 bar.

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

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