Cast Steel Float and Thermostatic Steam Trap FT450

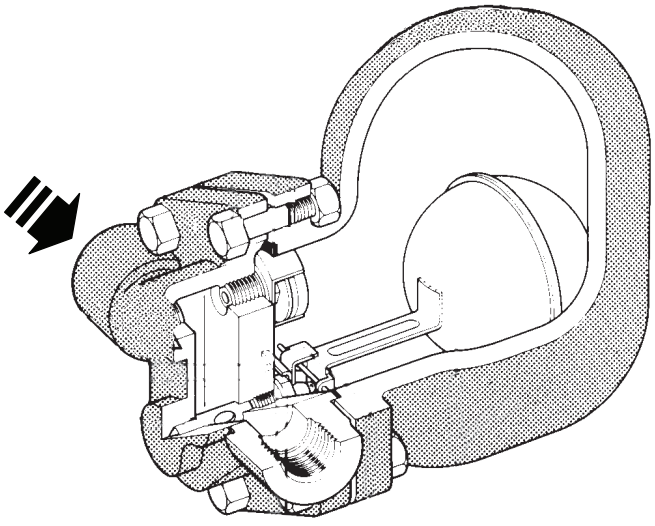
Description

The trap contains a float valve mechanism which modulates to discharge condensate continuously at steam temperature, while non-condensible gases are released by a separate internal balanced pressure thermostatic air vent.

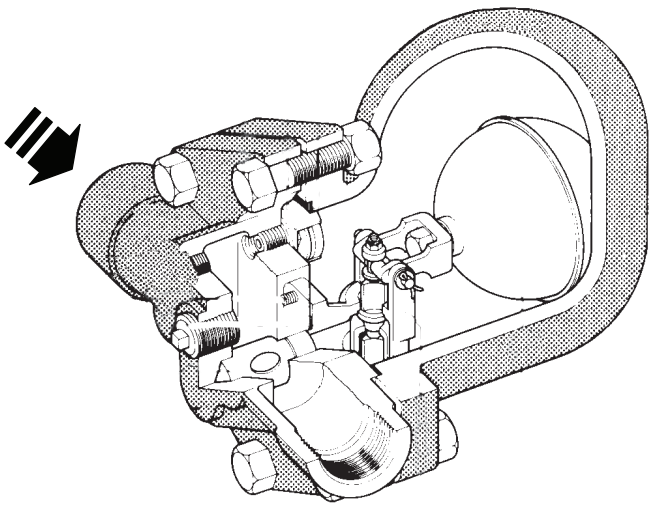
Model	**FT 450 (Replaces FT 32)**
PMO	465 psi g (limiting operating conditions, on page 2)
Sizes	¾" to 2"
Connections	NPT Carbon Steel Body
Construction	Stainless Steel Internals
Options	ANSI 150, 300 or 600 RF flanged SW Connections to ANSI B16.11 Bimetal Air Vent on 4.5, 10, 14, 21 and 32 Drain plug tapped ½" NPT models for superheat operation.

Typical applications

All process equipment, particularly when controlled by modulating temperature control valves; unit heaters, air heating coils, heat exchangers and steam main drip stations.



1½" and 2"



¾" and 1"

Limiting operating conditions*

PMO Maximum Operating Pressure	FT450-4.5:	65 psi g	(4.5 bar g)
	FT450-10:	145 psi g	(10 bar g)
	FT450-14:	200 psi g	(14 bar g)
	FT450-21:	300 psi g	(21 bar g)
	FT450-32:	465 psi g	(32 bar g)
Maximum Operating Temperature See graph for thermostatic air vent	Bimetal optional air vent 750 °F (400 °C) at operating pressures below 505 psi g (35 bar g)		

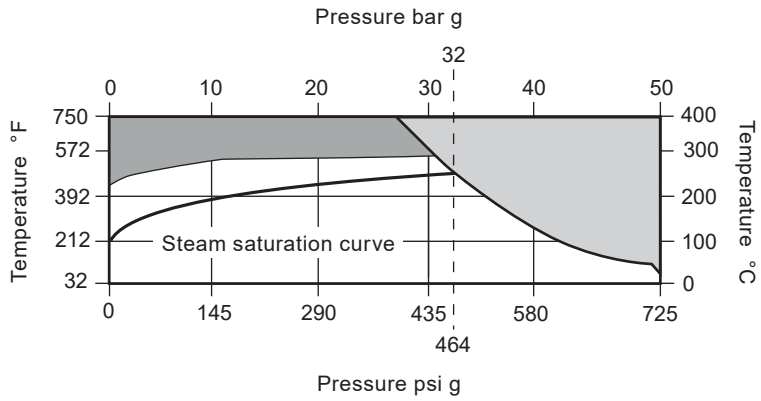
Pressure shell design conditions

For NPT, SW, ANSI 300, ANSI 600*

PMA	Maximum allowable pressure	535 psi g @ 650 °F (37 bar g @ 343 °C) 505 psi g @ 750˚F (35 bar g @ 400 °C)
TMA	Maximum allowable temperature	750 °F @ 0-505 psi g (400 °C @ 0-35 bar g)

* The limiting operating and design conditions for ANSI 150 flanged units will be limited by the Flange Rating.

Thermostatic air vent operating range



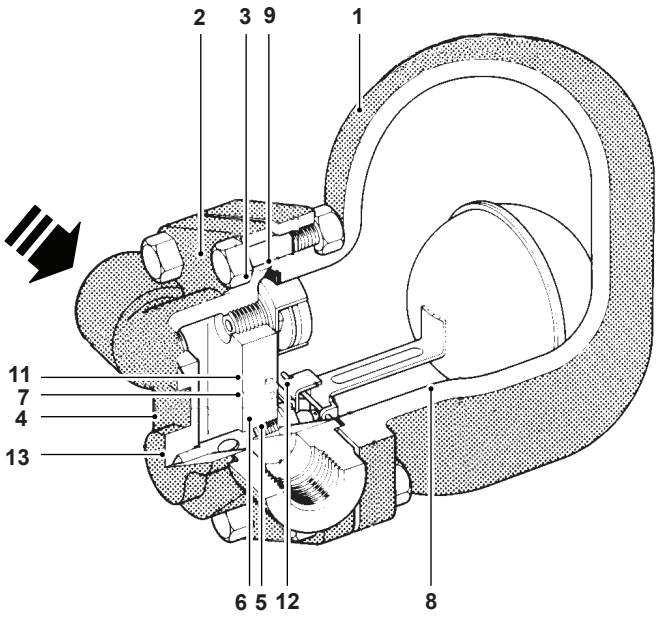
The product **must not** be used in this region.

Bimetal air vent required for use in this range.

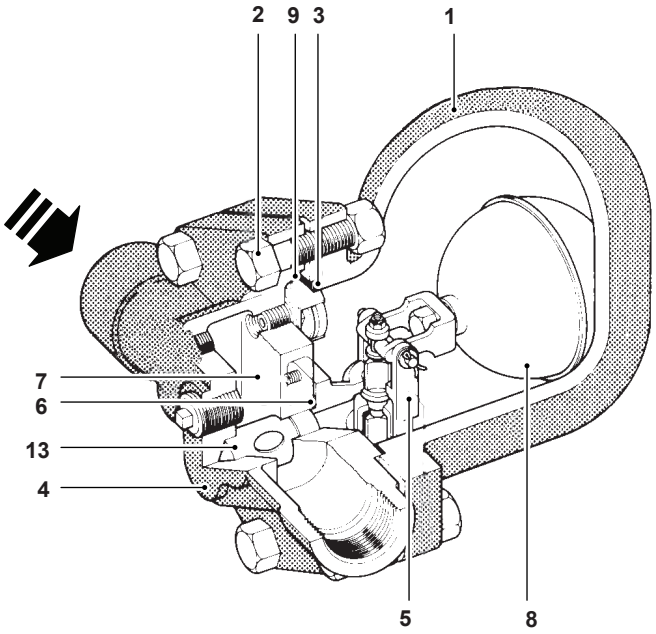
Capacities

See TI-S02-55-US

Materials



¾" and 1"

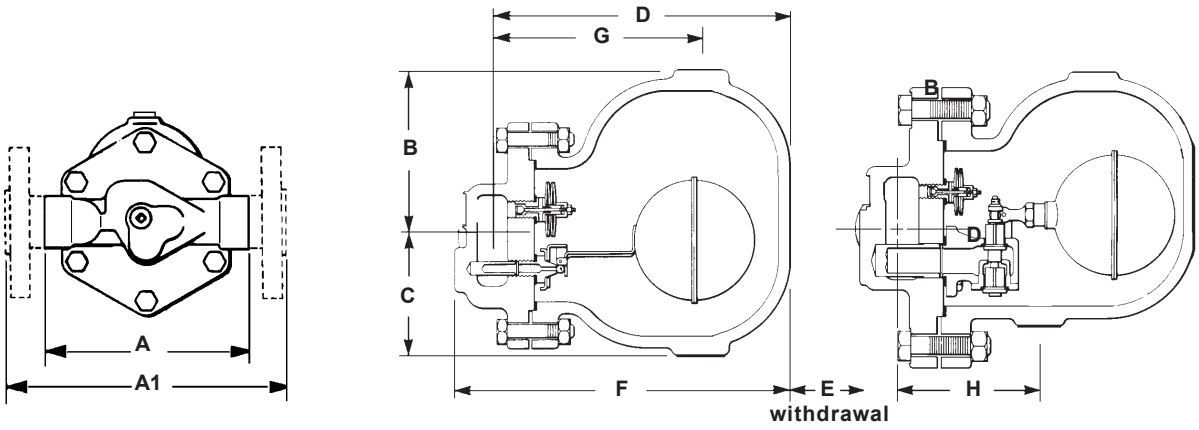


1½" and 2"

No.	Part		Material	
1	Body		Cast Steel	ASTM A216 WCB
2	Cover Bolts		Alloy Steel	ASTM A 193 B7
	Cover Nuts	¾" and 1"	7/16 - 14 UNC-2A	ASTM A 194 2H
		1½" and 2"	5/8-11UNC-2A	
3	Cover Gasket		Exfoliated Graphite	
4	Cover		Cast Steel	ASTM A216 WCB
5	Valve Seat (¾" and 1")		Stainless Steel	
	Main Valve Assembly w/ erosion deflector (1½" and 2")		Stainless Steel	
6	Valve Seat Gasket (¾" and 1")		Stainless Steel	
	Main Valve Assy		Stainless Steel Reinforced Exfoliated Graphite	
	Gasket 1½" and 2"			

No.	Part	Material
7	Pivot Frame Assy	Stainless Steel
	Set Screws (¾" and 1")	10-24 Fillister Head
	Main Valve Assembly	Stainless Steel
	Cap Screws (1½")	¼-20
	Studs and Nuts (2")	5/16-18
8	Ball Float and Lever	Stainless Steel
9	Air Vent Assembly	Standard Stainless Steel
9A	Optional Bimetal	Corrosion resistant Bimetal and Stainless Steel
10	Air Vent Seat Gasket	Stainless Steel
11	Support Frame	Stainless Steel
12	Pivot Frame	Stainless Steel
13	Erosion Deflector	Stainless Steel

Dimensions/weights (approximate) in inches (mm) and lbs (kg)



Size DN	Dimensions									Weights	
	A	A1	B	C	D	E	F	G	H	NPT/SW	Flg
¾" (20	6.1 (155)	10.0 (254)	2.6 (66)	2.6 (66)	6.4 (163)	4.7 (119)	7.4 (188)	4.0 (102)	-	18.0 lb (8.2 kg)	23.8 lb (10.8 kg)
1" (25	6.5 (165)	10.4 (264)	4.5 (114)	3.3 (84)	8.2 (208)	6.3 (160)	9.2 (234)	5.8 (147)	-	28.0 lb (12.7 kg)	33.0 lb (15.0 kg)
1½" (40	9.8 (249)	14.0 (356)	5.1 (130)	3.1 (79)	9.7 (246)	7.7 (196)	11.0 (279)	6.4 (163)	4.7 (119)	55.1 lb (25.0 kg)	64.0 lb (29.0 kg)
2" (50	11.8 (300)	16.0* (406)*	5.5 (140)	3.6 (91)	9.9 (251)	7.7 (196)	11.5 (292)	6.5 (165)	6.0 (152)	68.0 lb (31.0 kg)	82.0 lb (37.2 kg)

*ANSI 600 16.5" 419 mm

Sample specification

Steam traps shall be of the mechanical ball float type having steel bodies, horizontal line connections, and stainless steel valve heads, seats and ball floats. Incorporated into the trap body shall be a stainless steel balanced pressure thermostatic air vent capable of withstanding 45 ˚F (25 °C) of superheat and resisting waterhammer without sustaining damage. Internals of the trap shall be completely servicable without disturbing the piping.

Installation

A pipeline strainer should be installed ahead of any steam trap. Full port isolating valves should be placed to permit servicing. The trap should be installed below the drainage point of the equipment with a collecting leg before the trap, in a position so that the float arm is in a horizontal plane and the float rises and falls vertically, with the flow direction as indicated on the body. Refer to IMI 2.300 for complete instructions.

Maintenance

This product can be maintained without disturbing the piping connections. Complete isolation from both supply and return line is required before any servicing is performed. The trap should be disassembled periodically for inspection and cleaning of the valve head and seat, operating mechanism and air vent.
Worn or damaged parts should be replaced using a complete valve mechanism assembly and/or air vent assembly.

Complete installation and maintenance instructions are given in IMI 2.300, which accompanies the product.

Spare parts

Valve Mechanism Kit with Float (¾" and 1")	**A,B,C,D,E,F,G**
Valve Mechanism Kit (1½" and 2")	**A,B,D,P**
Air Vent Kit (PMO up to 21 bar)	**H,J,L,M,N**
Air Vent Kit (PMO 32 bar)	**H,K**
Gasket Kit (3 of each)	**B,K,T**
Ball Float (1½"and 2")	**C**