Steam Traps

Float & Thermostatic Steam Trap

FTT & FTTS Series

Float & Thermostatic

Model	FTT - Ductile Iron	FTTS - Stainless Steel
Sizes	1/2" - 2"	1/2" - 1"
Connections	NPT, 150# FLG (1" - 2")	NPT, SW 150# FLG
Body Material	Ductile Iron	316 Stainless Steel
PMO Max. Operating Pressure	300 PSIG	225 PSIG
TMO Max. Operating Temperature	Saturated Steam Temperature	
PMA Max. Allowable Pressure	350 PSIG up to 450°F	
TMA Max. Allowable Temperature	450°F @ 300 PSIG	



FTT - 1/2" & 3/4" available in NPT only.
FTTS - available in 1/2"–1" only; capacities same as 1/2"–3/4" FTT.

Typical Applications

DRIP, PROCESS: **FTT Series** steam traps with in-line pipe connections are used for the removal of condensate and air in HVAC and industrial process applications such as unit heaters, water heaters, pressing machines, heat exchangers and coils. They contain a high-quality welded stainless steel thermostatic air vent and stainless seat and mechanism. F&T traps have excellent air handling capability, making them a better choice than Inverted Bucket traps for most process applications. For drip applications, such as draining steam mains and steam supply lines, use 1/2" or 3/4" sizes.

How It Works

Float and thermostatic traps contain a float and seat mechanism with a separate thermostatic element which work together to remove both condensate and air from the steam system. The float, which is attached to a valve, rises and opens the valve when condensate enters the trap. This allows the condensate to discharge. Air is discharged through the thermostatic air vent to the outlet side of the trap. Steam entering the trap causes the thermostatic element to expand, closing the air vent and trapping the steam.

Sample Specification

The trap shall be of float and thermostatic design with ductile iron body and in-line piping configuration. Thermostatic air vent to be welded stainless steel. All internals must be stainless steel with hardened seat area. Trap must be in-line repairable.

Options

Live orifice air vent for superheated steam applications.
Drain connection - FTT: 1"-2"; FTTS: all sizes
FTTS only - Left, Right, or Vertical (downward) flow direction
SLR = Steam lock release

Installation and Maintenance

The trap must be installed upright and level for the float mechanism to operate properly. All internal components can be replaced with the trap body remaining in-line. Repair kits include thermostatic air vent, float, valve seat and disc, and gaskets. The standard thermostatic air vent can be damaged by superheat; therefore, in applications with superheated steam, the thermostatic air vent should be replaced with a special "live orifice" air vent.

Features

- Ductile Iron has a higher pressure and temperature rating and is more resistant to shock loads than cast iron
- All stainless steel internals with hardened seat and wear parts
- In-line repairability is simplified by having all internals attached to the cover
- Welded stainless steel thermostatic air vent resists shock from waterhammer. Live orifice air vent is available for superheated applications
- Excellent air handling capability allows air to be discharged rapidly so steam can enter the system quickly during start-up
- F&T traps discharge condensate immediately as it is formed (no condensate will back up into the system)

How to Size / Order

The PMO (maximum operating pressure) rating of model selected must meet or exceed the maximum steam pressure or the trap may not open. For example; the FTT-145 has a PMO of 145 psi. Condensate capacity (lbs/hr) of the trap is based on the differential pressure across the trap. For drip applications, a 1/2" FTT size is generally sufficient to exceed warm-up loads with a 2X safety factor. The condensate loads (lbs/hr) for process applications are normally calculated at the maximum steam pressure; then an appropriate safety margin is applied in order to select the trap with sufficient capacity when operating at lower steam pressures. Reference full explanation of Safety Load Factors in Steam Traps Introduction section.

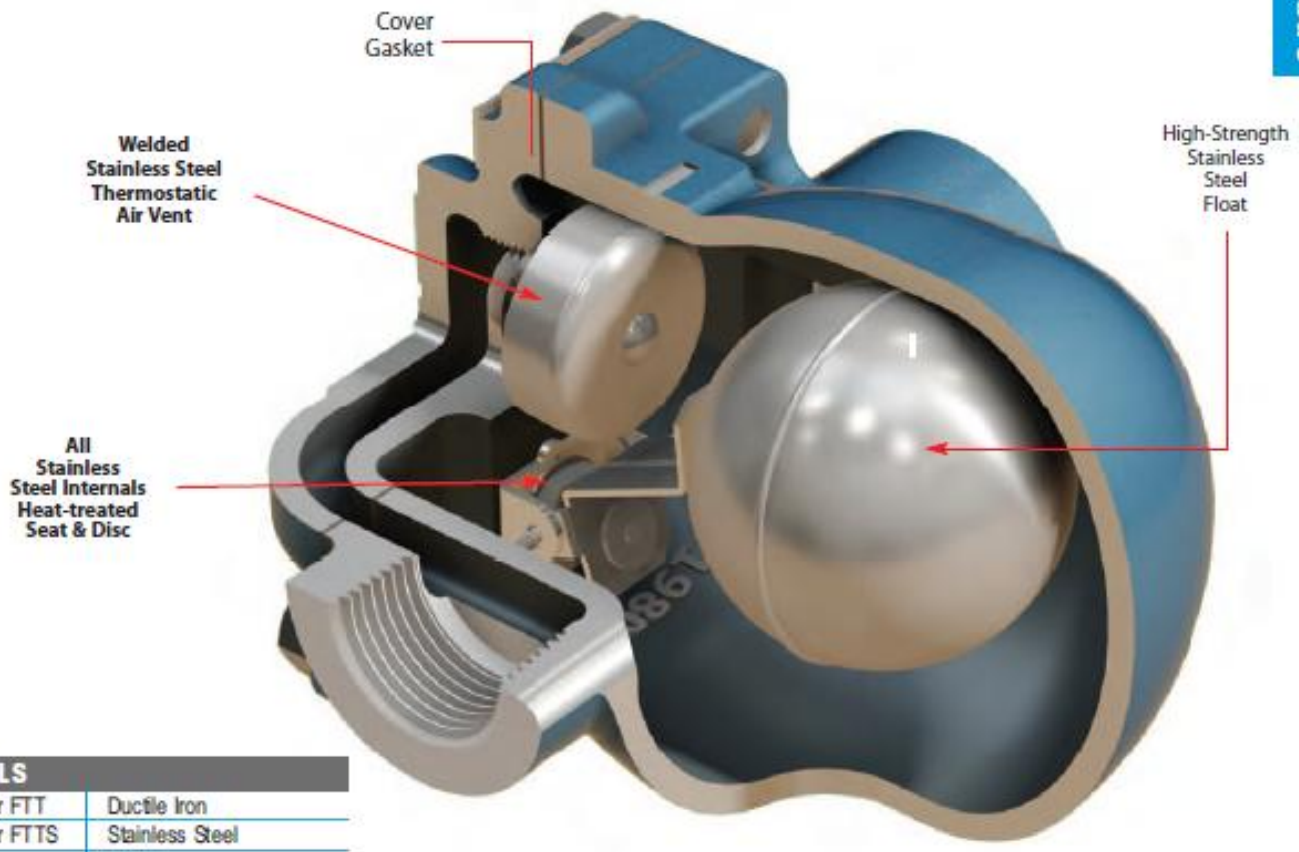
When a temperature control valve is regulating flow to the process equipment, it is recommended to select a trap with a PMO that will exceed the inlet steam pressure to the control valve.

For Example: Process application has a maximum steam inlet pressure of 100 psi, a maximum condensate load of 2,500 lbs/hr and is discharging to a condensate return line with a possible back pressure of 25 psig. **ΔP** = 100-25 = 75 PSI

To select trap: If the Safety Load Factor is chosen to be 2X max capacity at max differential pressure, then Trap should be selected based on 5,000 lbs/hr (2,500 x 2 = 5,000) at 75 PSI differential pressure with a PMO in excess of 100 PSIG

Selection: FTT-145-16-N, PMO=145 PSIG, 1½" NPT with a condensate capacity of 9,600 lbs/hr at 75 PSI differential pressure.

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MATERIALS	
Body & Cover FTT	Ductile Iron
Body & Cover FTTS	Stainless Steel
Gasket	Grafoil
Cover Screws	Steel, GR5
Float	Stainless Steel, AISI 304
Internals	Stainless Steel
Thermostat	Stainless Steel
Valve Seat	Stainless Steel, 17-4 PH
Valve Disc	Stainless Steel, AISI 420F

Connection Code: **N**=NPT **F150** = 150# FLG
1/2" & 3/4" available in NPT only.
PMO = Max Operating Pressure

CAPACITIES — *Condensate (lbs/hr)*

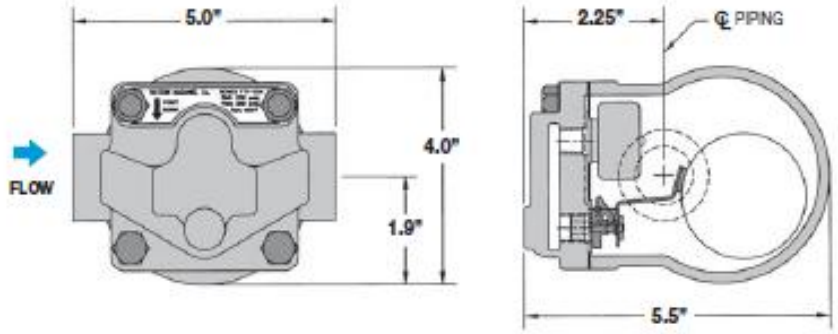
Model Code	PMO (PSIG)	Pipe Size	ΔP = Differential Pressure (PSI) 1/4	1/2	1	2	5	10	15	20	30	40	50	65	75	100	125	145	200	225	250	300
FTT-065-12-N	65	1/2"	115	155	205	270	390	520	610	685	810	910	995	1110								
FTT-065-13-N	65	3/4"	115	155	205	270	390	520	610	685	810	910	995	1110								
FTT-065-14-N	65	1"	340	500	775	1100	1700	2400	2800	3250	3925	4200	5000	5825								
FTT-065-16-N	65	1 1/2"	1150	1650	2500	3450	5300	7500	8180	10600	13100	15000	16800	18900								
FTT-065-17-N	65	2"	3470	4820	8500	11950	18700	25200	26900	36000	43000	48600	55500	61300								
FTT-145-12-N	145	1/2"	55	75	100	135	200	270	320	365	435	490	540	600	640	725	795	850				
FTT-145-13-N	145	3/4"	55	75	100	135	200	270	320	365	435	490	540	600	640	725	795	850				
FTT-145-14-N	145	1"	190	275	405	550	840	1200	1380	1600	1850	2200	2450	2750	2920	3400	3700	3900				
FTT-145-16-N	145	1 1/2"	685	970	1275	1750	2740	3750	4490	5100	6250	7200	8000	8900	9600	11250	12000	13300				
FTT-145-17-N	145	2"	1860	2680	3125	4400	6900	9250	13790	14600	16900	19400	21900	25000	26800	31000	34000	37000				
FTT-225-12-N	225	1/2"	40	50	70	95	135	185	220	245	290	330	360	405	430	485	530	565	645	680		
FTT-225-13-N	225	3/4"	40	50	70	95	135	185	220	245	290	330	360	405	430	485	530	565	645	680		
FTT-225-14-N	225	1"	150	200	300	405	600	820	975	1130	1375	1510	1620	1875	2000	2350	2600	2750	3100	3250		
FTT-250-16-N	250	1 1/2"	530	710	825	1130	1760	2500	2950	3375	4125	4740	5250	6000	6400	7300	8000	8650	10200	10800	11300	
FTT-250-17-N	250	2"	695	985	1560	2185	3490	4800	5800	6750	8250	9500	10650	12400	13300	15000	16600	18120	21200	22300	23200	
FTT-300-14-N	300	1"	100	155	220	300	460	630	750	860	1060	1240	1360	1450	1600	1820	2000	2130	2500	2650	2800	3000

*Note: 1/2" - 1" FTTS capacities same as 1/2" -3/4" FTT capacities.

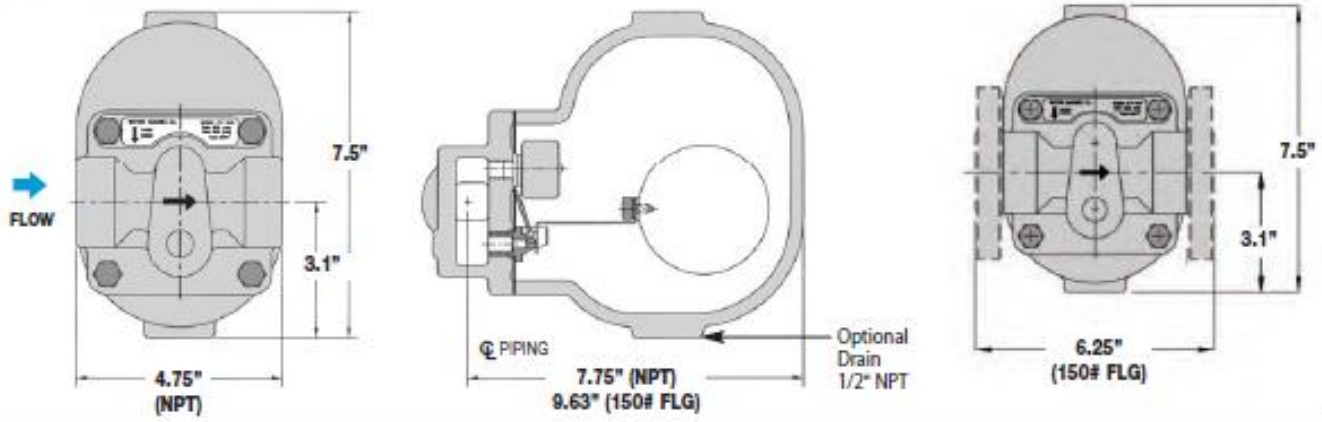
Dimensions: Inches

FTT Series Dimensions

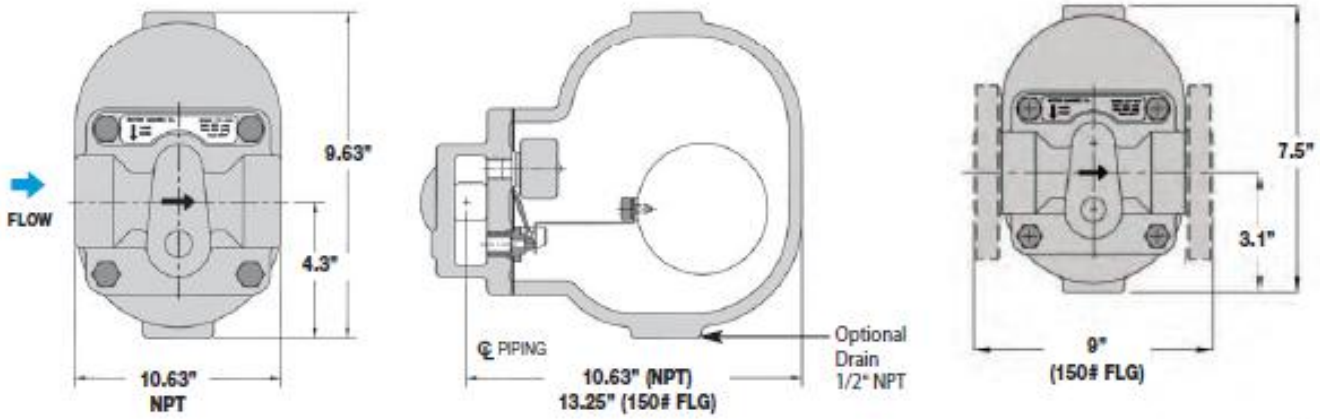
FTT • 1/2" & 3/4"
Weight **6 lbs.**



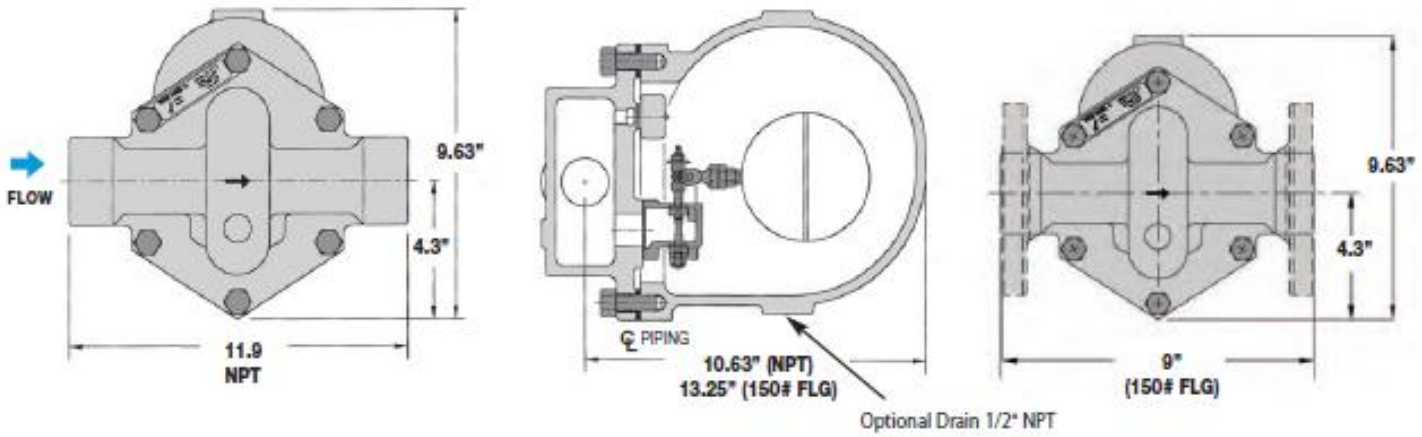
FTT • 1" • Weight NPT **16 lbs.**



FTT • 1 1/2" • Weight NPT **38 lbs.**



FTT • 2" • Weight NPT **42 lbs.**



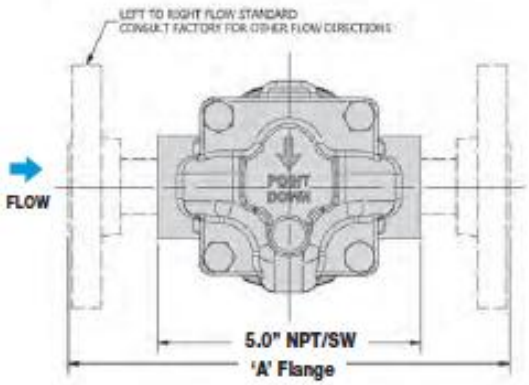
FTT & FTTS Series

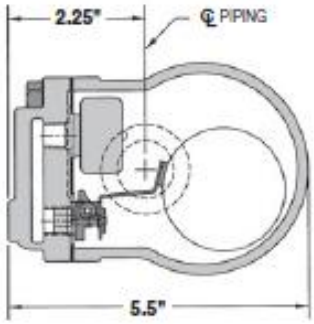
Float & Thermostatic

FTTS Series Dimensions

FTTS • 1/2", 3/4" & 1" • STAINLESS STEEL BODY

Weight (NPT/SW): **6 lbs.**

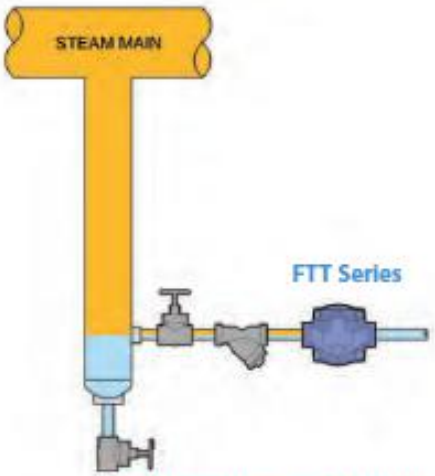




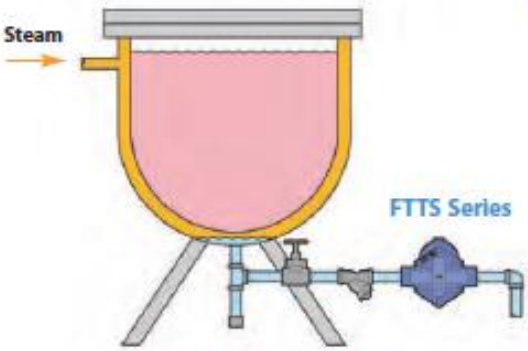
Flanged FTTS Dimen. & Weights			
Model	Conn.	'A' Dim. (in.)	Weight (lbs)
1/2"	150#	7.94	11.3
	300#	7.94	12.4
3/4"	150#	7.94	12.0
	300#	8.38	14.5
1"	150#	8.31	13.0
	300#	8.31	15.7

For vertical piping installation; consult factory.

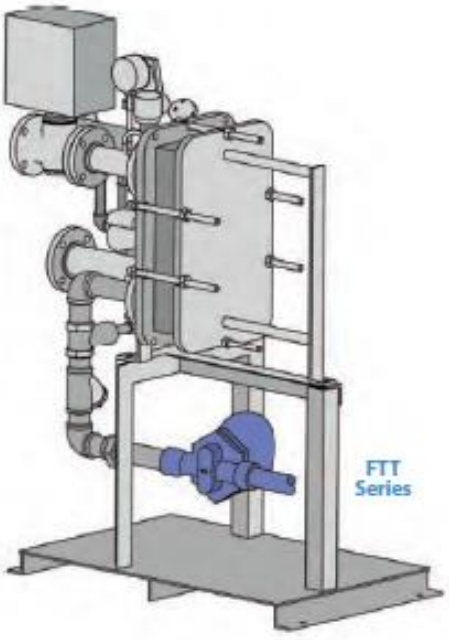
Typical Applications for Float & Thermostatic Steam Traps



Steam Main Drip Application



Jacketed Kettle Application



Instantaneous Steam to Hot Water Heater
(Heat Miser)