

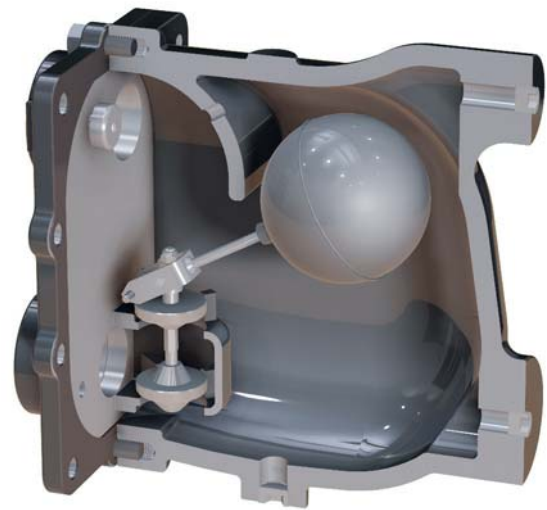
Steam Traps

Float & Thermostatic Steam Trap

FTE & FTES
Float & Thermostatic

| Model | FTE | FTES |
|--------------------------------|----------------------|----------------------|
| Sizes | 1 1/2", 2", 2 1/2" | 2 1/2" |
| Connections | NPT | NPT, SW, FLG |
| Body Material | Ductile Iron | Cast Steel |
| PMO Max. Operating Pressure | 200 PSIG | 300 PSIG |
| TMO Max. Operating Temperature | 450°F | 450°F |
| PMA Max. Allowable Pressure | 300 PSIG up to 450°F | 300 PSIG up to 750°F |
| TMA Max. Allowable Temperature | 450°F @ 300 PSIG | 750°F @ 300 PSIG |

The FTE & FTES are used for extremely high capacity condensate drainage applications.



Typical Applications

PROCESS: FTE & FTES Series are high capacity steam traps specifically designed to remove condensate and air from HVAC and industrial process applications with extremely high condensate load requirements. Examples include reboilers, absorption chillers, large air-handling coils, large heat exchangers and other large process equipment. They are available with a ductile iron (FTE) or steel body (FTES) and contain a high quality welded stainless steel thermostatic air vent and stainless mechanism. F&T traps have excellent air-handling capability, making them a better choice than Inverted Bucket traps for most process applications.

Features

- Ductile Iron has a higher pressure and temperature rating and is more resistant to shock loads than Cast Iron
- Cast Steel Body will allow operating pressures and temperatures up to 300 PSIG and 450°F
- High capacity steam trap for draining large process equipment (over 100,000 lbs/hr)
- 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 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 or cast steel body. The trap must incorporate all stainless steel internals with hardened seat and welded stainless steel thermostatic air vent. Trap must be in-line repairable.

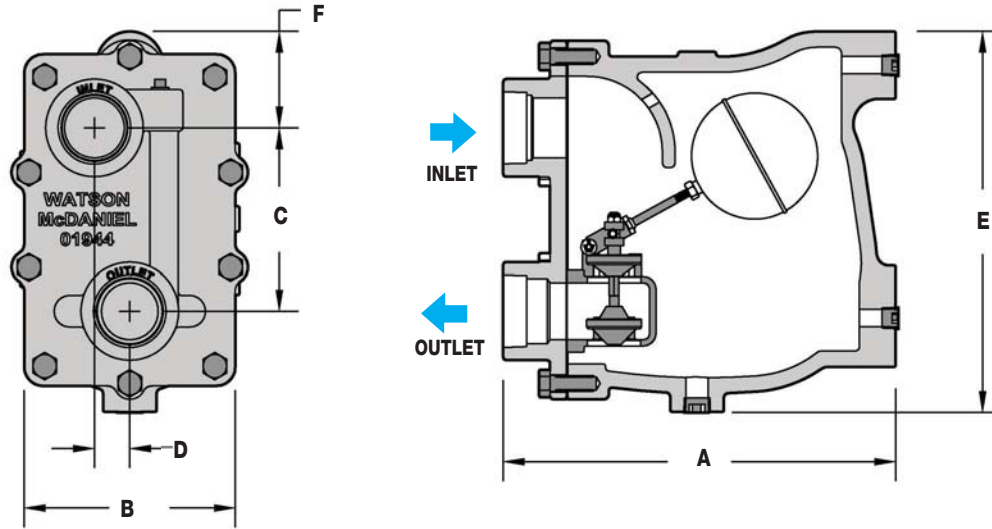
Installation and Maintenance

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 FTES Series have cast steel bodies and are available in 2 1/2" NPT, socket weld and flange connections. 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.

Options

Live orifice air vent for superheated steam applications.

Parallel-pipe inlet/outlet connections are standard as shown. An optional In-line inlet/outlet connection is available; contact factory.



| DIMENSIONS & WEIGHTS – inches | | | | | | | |
|-------------------------------|------|-----|-----|-----|------|-----|--------|
| Size/Model | A | B | C | D | E | F | Weight |
| 2" FTE-20 | 12.6 | 5.7 | 4.5 | 0.5 | 11.1 | 3.9 | 54 |
| 2" FTE-50 | 16.0 | 8.4 | 7.3 | 1.4 | 15.6 | 3.6 | 150 |
| 2 1/2" FTE-50 | 15.5 | 8.4 | 7.3 | 1.4 | 15.6 | 3.6 | 150 |
| 2 1/2" FTE-125 | 15.5 | 8.4 | 7.3 | 1.4 | 15.6 | 3.6 | 150 |
| 1 1/2" FTE-200 | 9.6 | 4.3 | 3.0 | 0.7 | 8.8 | 2.6 | 35 |
| 2" FTE-200 | 12.6 | 5.7 | 4.5 | 0.5 | 11.1 | 3.9 | 65 |
| 2 1/2" FTE-200 | 15.5 | 8.4 | 7.3 | 1.4 | 15.6 | 3.6 | 150 |
| 2 1/2" FTES-300 | 15.5 | 8.4 | 7.3 | 1.4 | 15.6 | 3.6 | 150 |

| MATERIALS | |
|-----------------------------|--|
| Body & Cover (FTE) | Ductile Iron |
| Body & Cover (FTES) | Cast Steel, ASTM A-216 |
| Cover Screw | Grade 5 Carbon Steel |
| Cover Gasket | Grafoil |
| Valve Discs | Stainless Steel, AISI 17-4PH |
| Main Valve Assembly Housing | Stainless Steel, AISI 17-4PH |
| Valve Assembly Gasket | Garlock |
| Ball Float | Stainless Steel, AISI 304 |
| Thermostatic Vent | Stainless Steel, AISI 300 Optional: Live orifice air vent |

Note: 2 1/2" FTES-50, 125 & 300 have same dimensions and weights.

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 FTE-125 has a PMO of 125 psi. Condensate capacity (lbs/hr) of the trap is based on the differential pressure across the trap. 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 a 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 10,000 lbs/hr and is discharging to a condensate return line with a possible back pressure of 25 psig. $\Delta P = 100 - 25 = 75$ 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 20,000 lbs/hr (10,000 x 2 = 20,000) at 75 PSI differential pressure with a PMO in excess of 100 PSIG

Selection: FTE-200-17-N, PMO=200 PSIG, 2" NPT with a condensate capacity of 21,500 lbs/hr at 75 PSI differential pressure.

CAPACITIES – Condensate (lbs/hr)

| Model Code | PMO (PSIG) | Pipe Size | Orifice Size | $\Delta P =$ Differential Pressure (PSI) | | | | | | | | | | | | | | | | | | | | |
|---------------|------------|-----------|--------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|--|--|--|--|--|
| | | | | 1/4 | 1/2 | 1 | 2 | 5 | 10 | 15 | 20 | 30 | 50 | 75 | 100 | 125 | 200 | 250 | 300 | | | | | |
| FTE-20-17-N* | 20 | 2" | .937" | 6100 | 7800 | 9300 | 11800 | 15900 | 19500 | 22500 | 26000 | | | | | | | | | | | | | |
| FTE-50-17-N | 50 | 2" | 2.125" | 12800 | 16900 | 20100 | 25300 | 33000 | 40200 | 43500 | 46000 | 47800 | 52500 | | | | | | | | | | | |
| FTE-50-18-N | 50 | 2 1/2" | 2.125" | 20400 | 25700 | 31000 | 37000 | 46300 | 55100 | 60300 | 65100 | 72000 | 82100 | | | | | | | | | | | |
| FTE-125-18-N | 125 | 2 1/2" | 2.125" | 20400 | 25700 | 31000 | 37000 | 46300 | 55100 | 60300 | 65100 | 72000 | 82100 | 90400 | 97700 | 105000 | | | | | | | | |
| FTE-200-16-N | 200 | 1 1/2" | .375" | 950 | 1350 | 1900 | 2200 | 2700 | 3300 | 3900 | 4400 | 5300 | 6400 | 7600 | 8500 | 9400 | 11900 | | | | | | | |
| FTE-200-17-N | 200 | 2" | .75" | 2700 | 4100 | 5700 | 7400 | 9900 | 11800 | 13400 | 14400 | 16400 | 19000 | 21500 | 23000 | 24500 | 29200 | | | | | | | |
| FTE-200-18-N | 200 | 2 1/2" | 1.5" | 7200 | 12300 | 17400 | 21500 | 27600 | 32600 | 36000 | 39300 | 43100 | 49200 | 54700 | 58800 | 61900 | 74000 | | | | | | | |
| FTES-50-18-N | 50 | 2 1/2" | 2.125" | 20400 | 25700 | 31000 | 37000 | 46300 | 55100 | 60300 | 65100 | 72000 | 82100 | | | | | | | | | | | |
| FTES-125-18-N | 125 | 2 1/2" | 2.125" | 20400 | 25700 | 31000 | 37000 | 46300 | 55100 | 60300 | 65100 | 72000 | 82100 | 90400 | 97700 | 105000 | | | | | | | | |
| FTES-300-18-N | 300 | 2 1/2" | 1.5" | 7200 | 12300 | 17400 | 21500 | 27600 | 32600 | 36000 | 39300 | 43100 | 49200 | 54700 | 58800 | 61900 | 74000 | 86000 | 100550 | | | | | |

* Single seat orifice. All others are double seated.