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Spence™ High Capacity Float and Thermostatic Steam Trap

Features

- Heavy Duty Construction
- Single and Double Seated Design
- Instantaneous Valve Action
- Water Sealed Valve
- High Capacity Air Handling
- Continuous Rapid Flow of Condensate
- Not Affected by Sudden Pressure Changes
- Energy Efficient and Cost Effective
- Operates Against Back Pressure
- Conforms to Federal Specification WWT-696

Introduction

A steam trap is an automatic valve which discharges condensate, undesirable air and non-condensibles from a system while trapping or holding in steam.

The FTH Series are float and thermostatic steam traps. The float actuates the valve via a hinged lever and linkage. The air vent is a balanced pressure design with stainless steel welded encapsulated bellows capable of discharging air and non-condensable gases continuously. The traps are cast iron bodied suitable for pressures to 200 psi / 13.8 bar with NPT connection.



Figure 1. High Capacity Steam Trap

Principle of Operation

On startup, air and non-condensable gases enter the trap and are automatically vented through an accurate balanced-pressure internal thermostatic air vent. As condensate enters the trap, the float and lever mechanism is raised, lifting the valve off the seat, discharging the condensate. Condensate will continue to be discharged at the same rate at which it is entering. Any air or non-condensable gas that may accumulate will be continually and efficiently passed by the thermostatic air vent.

High Capacity Steam Trap

Specifications

The Specifications section gives some general specifications for the High Capacity Steam Trap

Available Configurations

Types FTH-C2H9A and FTH-C2H9M:

Steam differential pressure to 20 psig / 1.4 barg

Types FTH-C5H9A and FTH-C5H9M:

Steam differential pressure to 175 psig / 12.1 barg

Types FTH-C5J9A and FTH-C5J9M:

Steam differential pressure to 175 psig / 12.1 barg

Body Sizes and End Connection Style

NPS 2 and 2-1/2 / DN 50 and 65

Maximum Operating Pressure⁽¹⁾

Type FTH-C2H9A and FTH-C2H9M: 20 psig / 1.4 barg

Types FTH-C5H9A, FTH-C5H9M,

FTH-C5J9A and FTH-C5J9M: 175 psig / 12.1 barg

Maximum Allowable Pressure⁽¹⁾

200 psig / 13.8 barg

Maximum Operating Temperature⁽¹⁾

Types FTH-C2H9A and FTH-C2H9M: 259°F / 126°C

Types FTH-C5H9A, FTH-C5H9M,

FTH-C5J9A and FTH-C5J9M: 450°F / 232°C

Maximum Allowable Temperature⁽¹⁾

450°F / 232°C

Capacity Information

See Table 1 and 2

Materials of Construction

Head and Body: Cast iron

Bolts: Steel

Gaskets: Compressed Graphite

Lever Assembly: Stainless steel

Float, Plug and Seat: Stainless steel

Air Vent: Stainless steel/Phosphorus Bronze or Monel

1. The pressure/temperature limits in this Bulletin and any applicable standard or code limitation should not be exceeded.

Table 1. Maximum Capacity - lbs/hr

TYPE	SIZE, NPT	SEAT TYPE	SEAT SIZE, In.	DIFFERENTIAL PRESSURE, psig															
				1/4	1/2	1	2	5	10	15	20	30	40	60	75	100	125	150	175
FTH-C2H9A and FTH-C2H9M	2	Single Seat	0.937	6000	7500	9000	11,500	15,500	19,000	22,000	25,000	----	----	----	----	----	----	----	----
FTH-C5H9A and FTH-C5H9M	2	Double Seat	1.50	8827	13,192	16,710	20,218	24,771	28,775	30,902	33,030	35,675	38,105	41,938	44,039	47,044	49,796	50,987	52,609
FTH-C5J9A and FTH-C5J9M	2-1/2	Double Seat	2.125	25,000	31,500	31,500	38,500	46,000	55,500	64,000	68,000	69,500	79,000	85,000	92,000	96,500	103,000	111,000	113,000

Table 2. Maximum Capacity - kg/hr

TYPE	SIZE, DN	SEAT TYPE	SEAT SIZE, mm.	DIFFERENTIAL PRESSURE, bar															
				0.02	0.03	0.07	0.14	0.34	0.69	1.03	1.38	2.07	2.76	4.14	5.17	6.90	8.62	10.3	12.1
FTH-C2H9A and FTH-C2H9M	50	Single Seat	23.8	2722	3402	4082	5216	7031	8618	9979	11,340	----	----	----	----	----	----	----	----
FTH-C5H9A and FTH-C5H9M	50	Double Seat	38.1	4004	5984	7580	9171	11,236	13,052	14,017	14,982	16,182	17,284	19,023	19,976	21,339	22,587	23,127	23,863
FTH-C5J9A and FTH-C5J9M	65	Double Seat	54.0	11,340	14,288	14,288	17,463	20,865	25,174	29,030	30,844	31,525	35,834	38,555	41,730	43,772	46,720	50,349	51,256

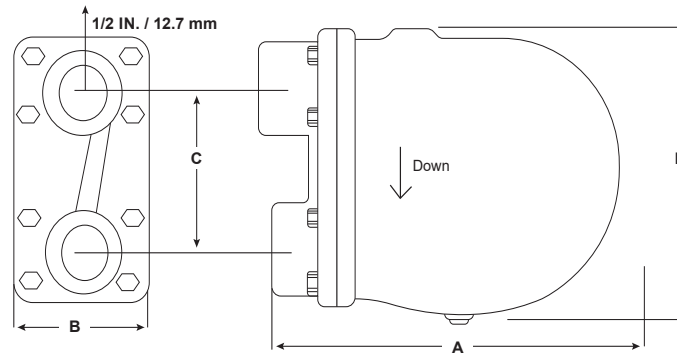


Figure 2. High Capacity Steam Trap Dimensions

Table 3. High Capacity Steam Trap Dimensions

TYPE	DIMENSIONS, IN. / mm				WEIGHT, lbs / kg
	A ⁽¹⁾	B	C	D	
FTH-C2H9A and FTH-C2H9M	12-1/4 / 311	6 / 152	4-1/2 / 114	10-3/4 / 273	44 / 20
FTH-C5H9A and FTH-C5H9M	16-1/2 / 419	7-1/2 / 190	4-1/2 / 114	10-3/4 / 273	62 / 28
FTH-C5J9A and FTH-C5J9M	20-1/2 / 521	8-2/3 / 221	7-1/2 / 190	12-4/5 / 325	117 / 53

1. Dimension without pit cock, deduct 4 in. / 102 mm
Note: Offset 1/2 in / 12.7 mm for all dimensions

Installation

The FTH Series should be installed in an accessible position and location for easy servicing. The trap seat rating stamped on the nameplate, must be equal or greater than the maximum pressure differential across the trap. Install the trap straight, plumb and in a level position to ensure proper installation.

- Determine where to install trap, based on the following requirements:
 - The trap must be located as closed as possible, and below the equipment to be drained.
 - The trap must be in a straight run of horizontal pipe, and pitched to allow condensate to flow into trap inlet, and away from trap outlet.
 - Allow for enough space around the trap for servicing which may include removal of the body or cover, depending on the model you are installing.
- Install a Y-strainer with a Blowdown valve in a pipe, ahead of steam trap. This prevents dirt from entering trap.
- Install union fittings and a shutoff valve in inlet pipe and outlet pipe. This allows trap to be isolated when servicing.
- Install a test valve in outlet pipe, and cap it. This allows trap to be tested. Cap is used as safety precaution when unit is not being tested.
- Blowdown piping using full steam pressure for five minutes. This cleaning process will remove debris from pipe and oil from system.

High Capacity Steam Trap

Ordering Information

When ordering, complete the ordering guide on this page. Refer to the Specifications section. Review the description to the right of each specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

Ordering Guide

Available Configurations (Select One)

- ☐ Type FTH-C2H9A
- ☐ Type FTH-C2H9M
- ☐ Type FTH-C5H9A
- ☐ Type FTH-C5H9M
- ☐ Type FTH-C5J9A
- ☐ Type FTH-C5J9M

Body Sizes (Select One)

- ☐ NPS 2 / DN 50
- ☐ NPS 2-1/2 / DN 65

Air Vent (Select One)

- ☐ SST / Phosphorus
- ☐ Monel

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