Float and Thermostatic Steam Traps

Series C, H, I and X BEAR TRAP®

The Series C, H, I and X Float and Thermostatic Traps are designed for commercial and industrial heating applications such as steam main drip traps, unit heaters, tank coils, air make-up coils, shell and tube heat exchangers, or others that require frequent start ups and continuous modulating loads.

- Maximum operating pressure 175 psi (12.1 bar)
- Maximum capacity 60,000 lb/hr.
- Meets Mil specification WW-T-696-E Type VI, Class 1-5

Part of the ESP PLUS EQUIPMENT SELECTION PROGRAM

For computer aided selection of steam specialties contact your local Hoffman Specialty Representative (see back cover for listing).

Series lb/hr	Maximum Capacity in. (mm)	NPT Size	Features
C	60,000	1 1/4 - 2 1/2 (32 - 65)	Inlet and outlet in trap cover. High capacity units.
H	9,800	3/4 - 2 (20 - 50)	4-Port piping convenience. Cover assemblies can be replaced without disturbing piping.
I	2,340 (20 - 32)	3/4 - 1 1/4	In-line piping provides maximum return line elevation. Cover assemblies can be replaced without disturbing piping.
X	24,000	2 (50)	Inlet and outlet in trap cover. Higher capacity than Series C 2 in. (50 mm)

How to Size Float and Thermostatic Steam Traps

Trap Sizing

1. Determine the capacity required by referring to the manufacturers' specifications for your equipment or by using the Helpful Hints on this page.
2. Determine the available steam inlet pressure.
3. Determine the outlet pressure at the trap discharge.
4. Determine the pressure differential across the trap. (Inlet pressure - outlet pressure = differential pressure)
5. Apply Safety Factor: multiply normal condensate load by 1.5.
6. Use the Capacity Tables to determine a model number.
7. Use Ordering Information Charts to determine the part number.

Example:Model Number

Model	Maximum Seat Pressure	Series
FT	015	H

Lifting Condensate to Overhead Return

Condensate must be lifted in applications where the trap is installed lower than the return.

Guidelines:

- The steam pressure at the inlet of the trap lifts the condensate. A steam pressure of 1 psi (.07 bar) across the steam trap will lift condensate 2.3 ft. (0.7m). Due to system pressure drop and friction, the lift factor must limited to 2 ft. (0.6m) for every 1 psi (.07 bar) pressure at the trap.
- Do not return condensate to an overhead return if modulating control valves are installed. They will cause the inlet pressure to modulate to 0 psi (0 bar), resulting in no differential pressure to push the condensate. Condensate will then back up into the steam chamber and result in water hammer. Use a Hoffman condensate unit to collect the condensate and pump it to the overhead return.

Helpful Hints

Approximating Condensate Loads

Heating Water with Steam

$$\text{Lbs./Hr. Condensate} = \frac{\text{GPM}}{2} \times \text{Temperature Rise °F.}$$

Heating Fuel Oil with Steam

$$\text{Lbs./Hr. Condensate} = \frac{\text{GPM}}{4} \times \text{Temperature Rise °F}$$

Heating Air with Steam Coils

$$\text{Lbs./Hr. Condensate} = \frac{\text{CFM}}{900} \times \text{Temperature Rise °F}$$

Conversion Factors

One Boiler Horsepower = 140 sq. ft. EDR or 33,475 Btu/hr. or 34.5 lbs./hr. steam at 0 psig

1,000 sq. ft. EDR yields .5 gpm condensate

To convert sq. ft. EDR to lbs. of condensate divide sq. ft. EDR by 4

To convert lb/hr. to kg/hr. multiply by .454

.25 lbs./hr. condensate = 1 sq. ft. EDR

One sq. ft. EDR (Steam) = 240 Btu/hr. with 2 psig steam filling radiator and 70°F air surrounding radiator

To convert Btu/hr. to lbs./hr. divide Btu/hr. by 960

One psi = 2.307 feet water column (cold)

One psi = 2.41 feet water column (hot)

One psi = 2.036 inches Hg

To convert psi to bar multiply by .069