

Inverted Bucket Steam Trap

Principle

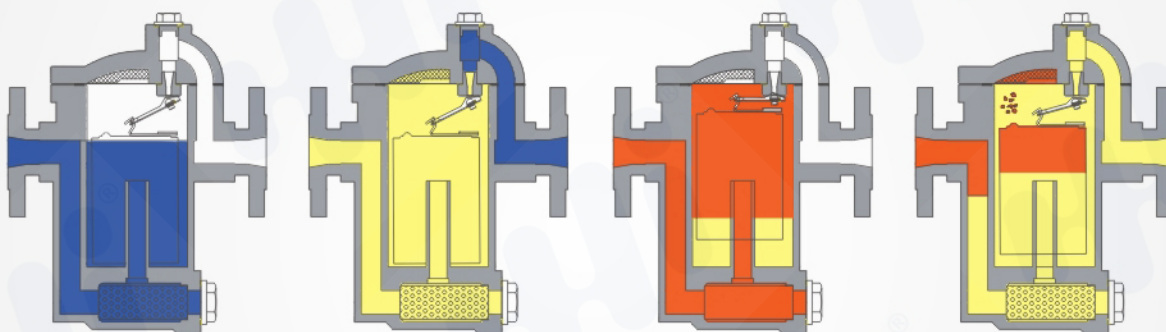
It controls the opening and closing of the valve using the density (buoyancy) difference between steam and condensate. Inside the valve, there is an inverted stainless steel bucket (float) connected to the valve core via a lever system. The inverted bucket has a small vent hole at the top, allowing air and carbon

dioxide gas to escape through the hole, collecting at the top of the trap. Any steam escaping through the vent hole condenses due to the cooling effect of the trap. This design ensures efficient operation of the trap by discharging condensate promptly while preventing steam leakage.



Operating Principle

Air
 Low temperature condensate
 Hot condensate
 Steam



1. Upon startup, air and condensate fill the pipes. The inverted bucket sinks, causing the lever to open the valve port, quickly discharging air and condensate for a fast startup.

2. As hot condensate flows into the trap, the inverted bucket remains sunk, and under working differential pressure, the hot condensate is discharged quickly.

3. When steam enters the inverted bucket, buoyancy lifts the bucket, causing the lever to close the valve port.

4. A small vent at the top of the inverted bucket allows some steam to escape. As some steam condenses and condensate levels rise, the bucket loses buoyancy, causing the lever to open the valve port, continuing condensate discharge.