INVERTED BUCKET TRAPS

The inverted bucket trap uses an inverted bucket as a float device connected by a linkage to the valve plug. The varying densities between condensate and steam are used to create a buoyancy force on the bucket to open and close the valve. These traps are primarily used in drip applications on stream mains and steam supply lines. They are generally not used in process applications due to their poor air handling capability. Bucket traps are extremely rugged and resistant to waterhammer and also resistant to any dirt and scale that may be present in the system.

Operation:

Upon start-up, the trap fills with condensate. Due to the weight of the bucket, it rests on the bottom of the trap keeping the valve open to let condensate flow out (Figure 3A). In the top of the bucket there is a small orifice (bleed hole) to allow air to escape the bucket and exit through the outlet (Figure 3B). When steam arrives through the inlet of the trap, it fills the inverted bucket. The density differential between the steam and the condensate causes the bucket to become buoyant and rise to the top of the trap, closing the valve (Figure 3C). As steam condenses and/or is bled through the small orifice, the bucket loses buoyancy as it becomes filled with condensate; this causes it to sink to the bottom of the trap. This opens the valve allowing condensate to escape from the system (Figure 3A). The small orifice in the top of the bucket is imperative for venting air from the system; however, it will also bleed steam once the air has been completely removed. The bucket trap must contain a certain amount of water (prime) in order to operate. Without this prime, the bucket will not be able to float and rest on the bottom of the trap, keeping the valve in the open position, allowing steam to escape (Figure 3D). Due to the balance of forces required between the incoming pressure and internal trap components, several orifice sizes are offered to accommodate various differential pressure ranges.
MAINTENANCE

All working components can be replaced with the trap body remaining in-line. The repair kit for the traps contain a lever and seat assembly with gasket. With superheated steam, a check valve must be installed at inlet of trap.

REPLACEMENT KITS

A replacement kit containing the lever and seat assembly is a more economical option than replacing the entire steam trap. Also available are replacement screens, gaskets and buckets.

When ordering replacement lever and seat assemblies specify model and operating pressure.