



ASME Flash Tank O&M

Elbi of America, Inc. flash tanks are designed for systems that require flashing of high pressure condensate into steam for low pressure heating supply mains and to reduce and cool low pressure steam before it is returned to the boiler, condensate receiver, or discharged into sewer.

1. Visually inspect the tank for possible damage which may have occurred during shipment.
If damaged please contact Elbi Of America, Inc. prior to installation at 713-674-2900.
2. Install flash tank in piping system using the inlet connection (threaded) as an inlet. The opposite (low) side connection will be the outlet. We recommend the installation of a drain valve at the bottom of the vessel for periodic blow down and clean out.
3. The condensate is discharged through the bottom of the flash tank.
When piping flash steam into a low pressure steam line and discharging condensate directly to a return line, it is important that the condensate has enough of a pressure differential to overcome any back pressure from the return line. Additionally, the placement of a steam trap after the flash tank would be necessary to prevent blow through of steam. If a steam trap is necessary, an inverted bucket (IB) trap is suggested (F&T can be substituted). The trap should be sized with a 3:1 safety factor. If back pressure exceeds tank pressure, the use of a reservoir and pumping trap may be necessary to ensure proper drainage. If the flash tank is held at atmospheric pressure, the use of a steam trap on the discharge line would not be necessary since the flash steam is being vented to atmosphere. The condensate, in this case, would be drained by gravity to a vented receiver which would be placed below the level of the flash tank.

Suggested Installation and Application

1. A flash tank, like a pumping trap or reservoir, should be located below any equipment or steam lines being drained. Condensate return lines should be pitched toward the flash tank. It is important that the flash tank be securely bolted to the surface on which it sits. Accordingly, inlet and outlet piping should be properly supported.

IMPORTANT: The flash tank is not designed to be the sole supporting structure for piping.

2. When multiple return lines are fed into the flash tank, check valves should be fitted to each line to prevent a reversal flow of condensate and resultant flash steam.
3. It is suggested that the condensate lines, the flash tank and the low pressure steam line be insulated to prevent waste of flash through radiation.
4. If the flash steam will be piped to a low pressure steam line for use in other applications within a plant, such as use in low pressure heating equipment, the flash tank pressure must be controlled accurately.

A. A back pressure regulator (BPR) should be connected into the low pressure steam line. This will relieve excess pressure in the system when steam demand is less than the amount of flash steam produced. The BPR should be sized to relieve the entire project load. **CAUTION: Do not use a BPR as a safety relief valve.**

B. A pressure reducing valve (PRV) should be connected into the high pressure steam line for make up steam. This will supplement the flash steam when the steam demand is greater than the amount of flash steam produced. The PRV should be sized to provide the entire low pressure steam demand.

IMPORTANT: A properly sized safety relief valve should be installed on the flash tank. It should be set for the flash tanks maximum allowable working pressure (MAWP) or the MAWP of equipment being supplied by the low pressure steam.

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