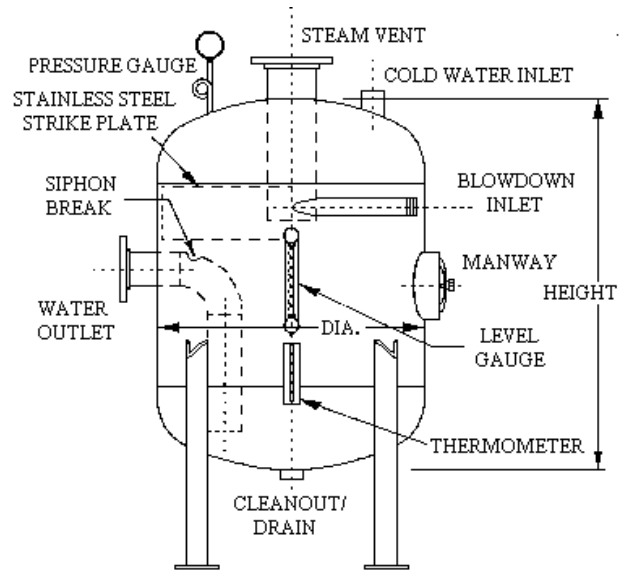


① Intermittent Blowoff Tank

Traditional Style Blowoff Tank Sized to National Board

Blowoff tanks are the traditional way of handling boiler intermittent blow-down. These style of tanks are normally recommended for utility and other larger steam process boiler applications. The tank is sized to collect each blowdown while allowing radiant heat to escape. The cooled blowdown in the tank then mixes with each new blowdown. Other applications require additional flows into the tank. This can include continuous blowdown, deaerator overflows, and other waste condensate flows. For these applications multiple inlets into the tank can be used. A automatic drain after-cooler can also be included to cool condensate to drain.

- **Sizing to National Board** - Catalog selector charts provide sizing to meet the requirement of the National Board recommendations.
- **ASME Code Rated** - Each unit is stamped and registered in accordance with the requirements of ASME Code Sec. VIII, Div. 1.
- **Stainless Steel Wear Plate** - As provided standard on all Penn tangential inlets. Welded to the shell interior prevents erosion of vessel side walls.
- **Minimize Cooling Water** - Each blowdown accumulates in the bottom half of the tank so that the next blowdown mixes with it and is cooled to drain.
- **Quiet Release of Steam** - Vent sized for low velocity release of steam to atmosphere. Vent noise levels below 90 dB(A).



Blowoff Tank Sizing

The National Board of boiler and pressure vessel manufacture makes recommendations for the sizing of Blowoff Tanks. Most States use or accept the National Board recommendations for sizing. A few states have their own Blowoff Tanks sizing rules. The location of the installation is important when designing a tank.

For sizing to national board the boiler steam drum size must be know. The calculation $4/12 \times \text{Drum "DIA.in FT."} \times \text{Drum "LENGTH in FT."}$ gives the cubic foot holding capacity of the tank. Tanks are generally available in diameters 18", 20", 24", 30", 36", 42", 48", 54", 60" and 72" outside diameter . Tank overall heights can be 3', 4', 5', 6', 7', 8', 9' and 10'. The diameter and tank height is selected to give the holding capacity based on the boiler drum size. Selection of a drain and vent must also be made. These sizes are determined from the flow rate, velocities, and pressure drops. To make this selection the blowdown valve size and boiler operating pressure must be known. When contacting your representative for sizing please include the boiler steam drum size, blowdown valve size, boiler operating pressure, and location of installation.

Blowoff Tank Suggested Specifications:

Furnish and install as shown on plans a traditional style vertical Blowoff Tank as manufactured by Penn Separator Corp. The tank shall be designed to meet the requirements of the National Board or design for the requirements of the State or Province of installation if different.

The tank shall be a open to atmosphere type and operate at an internal pressure not to exceed 5 psi. The tank shall be ASME Code Sec. VIII, Div. 1 designed and stamped for a minimum 50 psig at 450 deg. F.

The tank shall include a tangential inlet with stainless steel wear plate to match the blowdown valve size, a steam vent should be provided as direct as possible to atmosphere and should be sized large enough to limit pressure drop to 1 psi and vent noise below 90 dB(A), a overflow type outlet shall extend with in 6" of the bottom of the tank. Additional coupling connections shall be included for required tank gauges, tank clean-out, and cold water inlet. Openings required for inspection should also be included.

The tank shall be supported by a set of angle legs. The exterior to be power tool cleaned and receive a coat of shop primer.