

Wessels Blowdown Tank Storage & Maintenance

## Product Storage and Handling Requirements



**WARNING:** Carefully read the Storage and Handling Requirements to avoid serious Personal injury and/or damage to property and to ensure safe use and proper care of this product

Wessels ASME tanks rigidly constructed and are designed to be easily handled by the end user. Upon receiving product, a visual inspection should be performed, as damage may have occurred during transit.

### Handling:

All tanks should be moved using the lift lugs welded to the unit (if equipped). Lifting the tank by clipping an eye hook into the lift lugs is the safest and most effective way to move the unit. Note that not all lift lugs are placed at the center of gravity, the unit may shift once lift off the ground. Ensure that the weight of the unit does not exceed the rating of the rigging equipment.

### Outdoor Storage:

- Cover all units with a tarp to protect from the elements.
- Do not store in potential flood plain.
- Cover all openings on the units to prevent foreign matter from entering the unit.
- Place in a safe location, away from heavy traffic.

### Indoor Storage:

- Cover all openings on the units to prevent foreign matter from entering the unit.
- Unit should be stored in a dry environment, away from any potential sources of moisture.
- Place in a safe location, away from heavy traffic.

### Platform Mounted Reciprocating Compressors, Fatigue Consideration:

Installations where a reciprocating compressor is driven by an electric motor over 2HP and is directly mounted on the platform supported by the tank must meet the requirements of ASME Code Section VIII, Division I, Paragraph UG-22. In this regard, the document specifically states whether the particular compressor - motor – tank combination is satisfactory when bolted or non-bolted to the floor and whether it requires soft or hard mounting to be acceptable. This information is applicable to both horizontal the vertical platform mounted units, but is unavailable for gasoline or diesel engine drives.

### Pressure Relief Valves:

Each tank shall be protected by 1 or more safety valves and other indicating and controlling devices that will insure safe operation of the tank. If the tank has a volumetric capacity in excess of 2,000 gallons, it shall be fitted with at least 2 safety valves, the smallest of which shall have a relieving capacity of at least 50 percent of the relieving capacity of the largest valve. These appliances shall be constructed, located, and installed so that they cannot be readily rendered inoperative. Safety valves shall be of the direct spring-loaded type, and for pressures of 2,000 psi or less shall be equipped with a

substantial lifting device so that the disc can be easily lifted from its seat not less than 1/8 the diameter of the seat when the pressure in the tank is 75 percent of that at which the safety valve is set to open. For pressures in excess of 2,000 psi, the lifting device may be omitted providing the valve is removed for testing at least once each year and a record is kept of this test and made available to the qualified inspector. For pressures exceeding 2,000 psi acceptable rupture discs may be used in lieu of spring-loaded safety valves. All safety valves shall be ASME stamped and rated for air or water pressure service. The safety valves and rupture discs shall be set to open at not more than the allowable working pressure of the tank, and the relieving capacity shall be sufficient to prevent a rise of pressure in the tank of more than 10 percent above the allowable working pressure when all connected compressors are operating with all unloading devices rendered inoperative. The opening or connection between the tank safety valves shall have a cross-sectional area at least equal to the combined areas of all attached safety valve inlets.

No valve of any description shall be placed between the required safety valve or rupture discs and the tank.

All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition. It is recommended that safety valves up to and including 200 psi setting shall be tested at least monthly. Discharge pipes from safety valves and rupture discs installed on tanks shall have a cross-sectional area at least equal to the combined outlet areas of all valves discharging into them, and shall be designed and installed so that there will be no interference with the proper operation or discharge capacity of the safety valve or rupture disc. No valve of any description shall be permitted in these discharge pipes. All discharge pipes shall be fitted with open drains which will prevent the accumulation of liquid above the safety valve seat or rupture disc. Discharge pipes shall be installed and supported in a manner that will prevent undue stresses on the safety valve or rupture disc. The discharge from all safety valves and rupture discs shall be led to a safe place of discharge.

#### Pressure Gauges

If required, each tank shall be equipped with a suitable pressure-indicating gauge with the dial graduated to not less than 1.2 times the pressure at which the safety relief valve is set to function.

#### **Drain Connection:**

Each tank shall be equipped with a manually operated, valve drain located at the lowest point in the tank where water can collect. Even automatic drains should be equipped with a manually operated bypass. It is recommended that the tank be drained periodically as needed based on frequency of operation.

#### **Piping:**

Piping and components attached to the tank should be installed with adequate support and provisions for expansion and vibration dampening to prevent excessive loading on the tank. This should be done utilizing flexible connections at the vessel inlet and outlet(s). It is also recommended that excessively long runs of piping, if used, should be adequately supported and provided with shock isolators to minimize fatigue loads from being transmitted back to the tank.

Piping from the tank to the first shut off valve must be rated extra-heavy. Plastic piping or tubing must never be used in any distribution system.

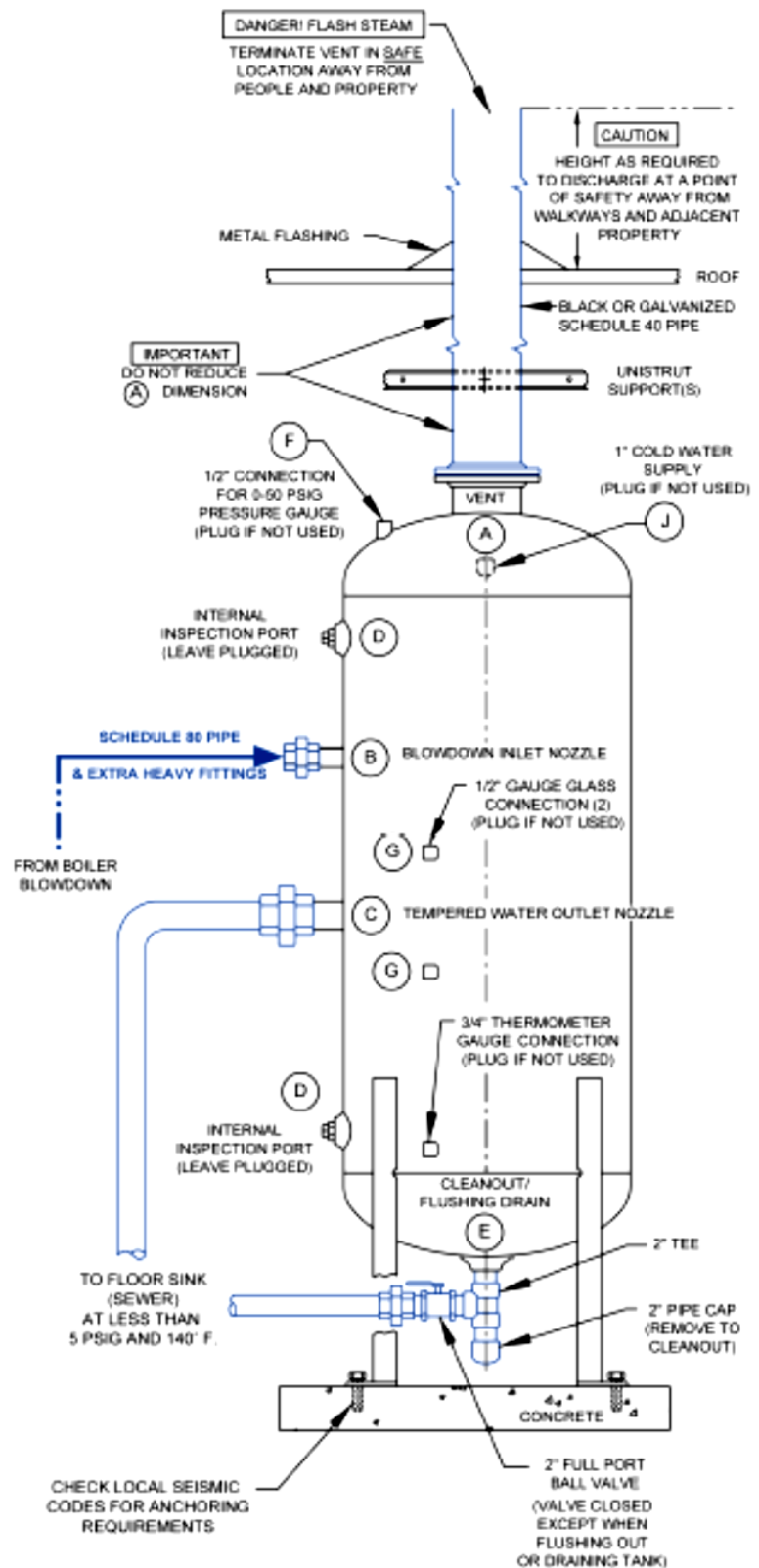
# BLOWDOWN (BLOWOFF) TANKS - INSTALLATION & OPERATION

## Installation

1. Level tank on concrete pad (with shims if required) until plumb.
2. Limit the number of elbows in vent piping to two 45° offsets.
3. Do not use plastic pipe or fittings.
4. Do not insulate the tank.
5. For multiple boiler connections, continuous blowdown systems or frequent blowoff operations - an aftercooler may be required to keep the tempered water outlet temperature at or below 140° F. Use cold water connection (J) for manual control, or install automatic aftercooler system at the tempered water outlet nozzle (C).
6. Blue lines indicate field piping.

## General Operating Instructions

1. Electrically turn off boiler feed pump.
2. Blowdown low pressure steam boilers at or near operating pressure.
3. Blowdown high pressure steam boilers between 50-75 PSIG.
4. Note the water level in the boiler's gauge glass.
5. If boiler is equipped with fast & slow opening blowdown valves, open the fast one first, the slow one second. Shut blowdown valves off after water level in boiler gauge glass drops about 4" (see step 7).
6. Restore power to boiler feed pump. Pump should come on and refill the boiler to normal operating level.
7. Your chemical treatment company may alter the amount and frequency of blowdown based on specific job conditions.



**RIGHT SIDE VIEW**

**Inspection:**

Tanks shall be so installed that all drains, handholes, inspection plugs and manholes therein be easily accessible. tanks should be installed with sufficient clearance to permit a complete external inspection and in such a manner to avoid corrosion of external surfaces. Under no circumstances shall the tank be buried underground or located in an inaccessible place or location.

Mounting of the horizontal and vertical tanks of all sizes require installations that are in accordance with approved National Standards. This could include foundations and bolting to meet wind or seismic loading. Detailed designs for mounting are available to meet all design requirements.

In most jurisdictions, a permit to operate an ASME tank is required when located in public places and places for employment. Once granted, the tank is re-inspected at intervals in accordance with the local laws. This may be yearly or every three years but should not be more than every five years. These inspections are performed by the local jurisdiction or insurance company representative, who are commissioned by the National Board of Boiler and Pressure Vessel Inspectors. Regardless of jurisdictions, it is the responsibility of the user/owner of the tank to assure that the vessel has not deteriorated by erosion or corrosion.