

## Air Storage Tanks

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### Safety Devices and Systems.

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(a) Each air 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.

(b) Safety relief valves shall:

(1) Be constructed and installed in accordance with ASME Boiler and Pressure Vessel Code, Section VIII.

(2) Be located and installed so that they cannot be readily rendered inoperative.

(A) No valve of any description shall be placed between the required safety valve or rupture disc and the air tank.

(B) The opening or connection between the tank and safety valve or valves shall have a cross-sectional area at least equal to the combined areas of all attached safety valve inlets.

(3) Be of the direct spring-loaded type. The springs shall not be adjusted to carry more than: 10 percent greater pressure than the set pressure stamped on the valve up to and including 250 psig; or 5 percent greater pressure than the set pressure stamped on the valve above 250 psig.

(A) For pressures of 2000 psig or less safety valves 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.

(B) For pressures exceeding 2000 psig: the lifting device may be omitted providing the valve is removed for testing at least once each year and a record kept of this test and made available to the qualified inspector; acceptable rupture discs may be used in lieu of safety valves provided they are in compliance with Section 465(b)(2), (4) and (5).

(4) Be set to open at not more than the allowable working pressure of the tank.

(5) Have a relieving capacity 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.

(6) Not have seats or discs of cast iron.

(7) Be tested frequently and at regular intervals to determine whether they are in good operating condition.

(c) Discharge pipes from safety valves and rupture discs installed on air tanks shall:

(1) Have a cross-sectional area at least equal to the combined outlet areas of all valves discharging into them.

(2) 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.

(3) Have no valve of any description.

(4) Be fitted with open drains which will prevent the accumulation of liquid above the safety valve or rupture disc.

(5) Be installed and supported in a manner that will prevent undue stresses on the safety valve or rupture disc.

(6) Be led to a safe place of discharge.

(d) Each air tank shall be equipped with a suitable pressure indicating gage with the dial graduated to approximately double the operating pressure, but in no case less than 1.2 times the pressure at which the safety-relieving device is set to function.

(e) Each air tank shall be equipped with a manually operated, valved drain located at the lowest point where water can collect. The valve for this drain shall be suitably located for convenient operation. Automatic drains shall not be considered as complying with this order unless also equipped with a manually operated by-pass.

NOTE: It is recommended that each air tank be completely drained of accumulated moisture at least once during each day of operation.

### **Transporting Cylinders**

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SCBA or SCUBA cylinders must have valve protection caps in place when they are being transported. Cylinders are not to be moved with regulators attached.

Cylinders are to be secured or strapped during transport to ensure stability and to prevent the cylinders from falling off the vehicle or cart that is being used to transport them.

Transportation of cylinders must be carried out only by trained personnel using approved vehicles.

### **Air receivers and Compressors**

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All air receivers or tanks used for storage of 1 cubic foot or more of compressed air at a pressure in excess of 50 psig. must be constructed in accordance with the ASME Boilers and Pressure Code.

The maximum allowable working pressures of air receivers should never be exceeded, except when being tested. Only hydrostatically tested and approved tanks shall be used as air receivers

All safety valves must be installed and maintained in accordance with the ASME code

Air receivers and tanks are to be installed so that all drains handholds, and personnel access openings are easily accessible, and should be supported so as to allow sufficient clearance for complete external inspection.

Provisions must be made for the removal of oil and water from the tanks. Drain valves must be located at the lowest point possible and a draining schedule established to prevent the accumulation of excessive amounts of liquid in the receiver.

Readily visible pressure gauges must be installed. Spring loaded safety devices with a total relieving capacity sufficient to prevent a rise in pressure of more than 10 percent above the maximum allowable working pressure must also be installed

At least one safety valve in each system must be set to operate at or below the maximum allowable working pressure.

Valves must not be installed between the air receiver and any of its safety valves.

All safety appliances such as safety valves, indicating devices, and controlling devices must be constructed, located, and installed so that they cannot readily be made inoperative by any means, including weathering

Hoses and lines used in any compressed air system must be rated to meet the maximum operating pressure (both static and transient) of the equipment or apparatus

Hoses and lines should be properly assembled; incorrect fittings should be avoided