

Pressure relief (safety) valves - Installation

How big should they be?

The total capacity of the safety valve or valves fitted to any receiver or system of receivers should be sufficient to discharge the maximum volume of compressed air that can be generated or supplied, thus preventing the pressure exceeding that permitted by the application standard. For example if 200 L/s (400cfm) is being supplied by a compressor(s) then the valve should be sized such that it can discharge at least this volume of air.



Where should they be mounted?

Safety valves should be mounted directly on connections used for no other purpose, except for connections that do not interfere with the proper functioning of the safety valve, e.g. pressure gauges or thermocouples.



Can they be mounted away from the air receiver?

Where direct mounting is not practical, a length of connecting piping may be used but in no case should the pressure-drop between the safety valve and the receiver it protects exceed 3% of the set pressure of the safety valve.



Are they allowed to have long exhaust pipes?

Any discharge piping from safety valves should be as short as possible and should have a bore at least equal to the bore of the safety valve outlet. Discharge piping should be adequately supported and arranged so that the discharge does not cause injury or damage.



The purchaser should inform the safety valve manufacturer of any imposed back pressure on the discharge side of the valve. The manufacturer should confirm the suitability of the valve for the back pressure specified and provide the capacity correction factor to be applied when appropriate.

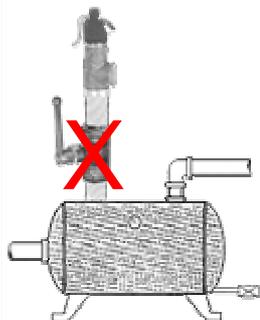
Should they be mounted vertically or horizontally?

The safety valve(s) should be mounted with the spindle in the vertically upward position. If it is desired to mount the valve in any other position, the requirement should be agreed with the manufacturer.



When can a shut-off valve be used to allow easy maintenance?!

An air receiver and the pressure relief safety valve used to protect it shall never be isolated from each other by any form of shut-off valve. Where maintenance or testing of the pressure relief safety valve is required then the air receiver it protects shall be isolated from the system and the air pressure exhausted safely before the valve is removed from the air receiver.



More information

The information presented here is taken from BS 1123-1:1987, which although now withdrawn is still available from BSI.