

Pressure Safety Valve installation



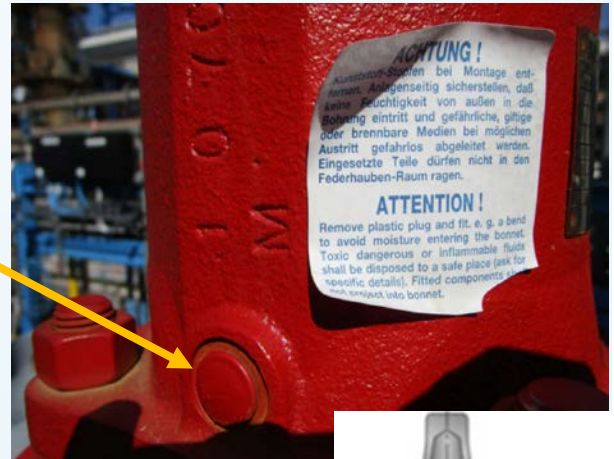
EPSC Learning Sheet October 2024

EPSC

What Happened:

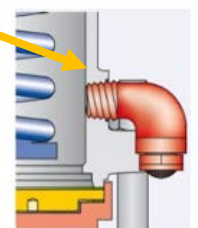
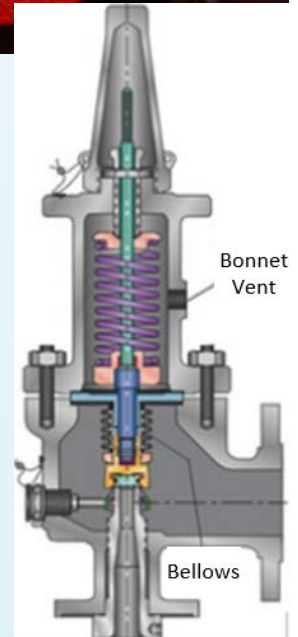
The bonnet vent in a Balanced Bellows Pressure Safety Valve (BB-PSV) was found in service, but still fitted with a shipping plug.

Internal leakage past the bellows would give back pressure, raising the set pressure above its design, so not protecting the equipment.



Aspects:

- BB-PSVs use bellows to compensate for back pressure and to prevent chattering in operation.
- BB-PSVs are used where there are long discharge pipes, or if several PSVs are linked.
- To work correctly, the bonnet vent of BB-PSVs must remain open to atmosphere.
- Vent plugs can be replaced by an elbow to stop water ingress or bugs entering.
- Inside buildings, the bonnet must vent to a safe place (or gas alarm) in case the bellows leaks.
- If icing is possible, consider frost protection.
- See API 520-2 Section 10.3 for more details.



Elbow with bug screen

Bonnet vents in a Balanced Bellow - Process Safety Valve, must be open