

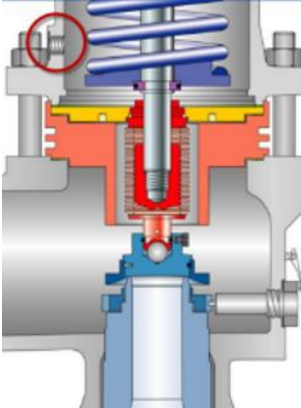
A blindspot with balanced bellows safety valves



Wim Huisman - COE Health and Safety Culture / Ryszard Hellebrand - COE Process Safety

Story Line

Westlake



Westlake

A global producer of performance and essential materials and building products, HQ in Houston





80+
Manufacturing
Facilities

16,000
Employees

\$ 12.5 billion
Sales 2023



Applications

Product	End-use and Applications
Polyethylene 	<ul style="list-style-type: none">• Solar cell films• Personal care products• Sterile medical packaging• Food preservation
PVC & Copolymers 	<ul style="list-style-type: none">• Medical equipment, e.g., blood bags, pill blister packs• Vinyl flooring and wall covering• Consumer durables• Automotive applications• Credit card films• Vinyl records
Epoxy Resins 	<ul style="list-style-type: none">• Wind turbines• Automotive & aerospace composites• Electrification/semiconductor chips• Coatings for consumer applications• Adhesives and construction applications
Housing & Infrastructure 	<ul style="list-style-type: none">• Roofing• Windows• Siding, trim, moulding• Pipes and fittings• Decorative stone

What is a balanced bellows safety valve?

- This type of pressure safety valve contains a bellows
- The bonnet space above the bellows should be exposed to atmospheric pressure
- So that downstream blow off pressure does not affect the intended pressure set point.

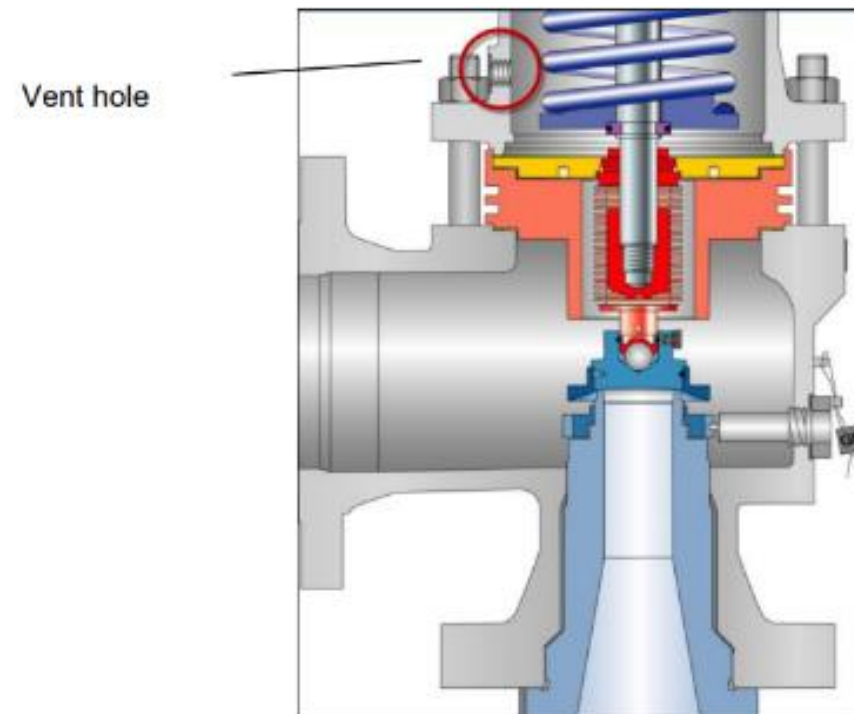
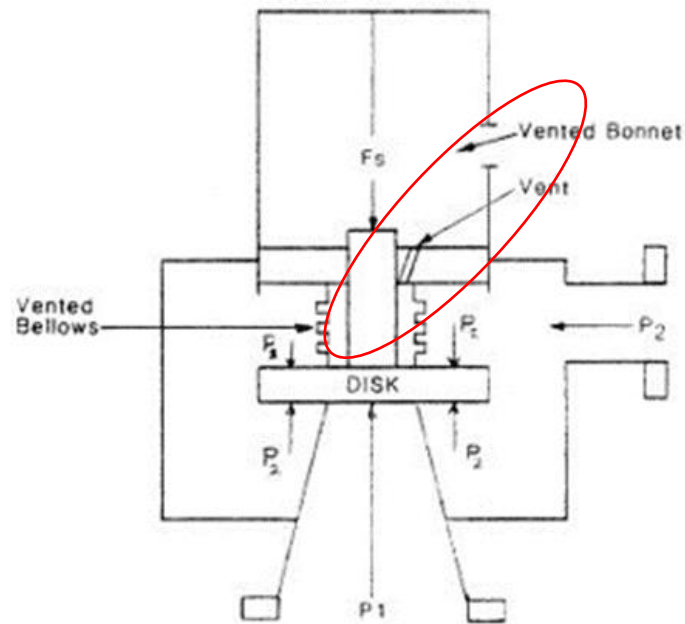
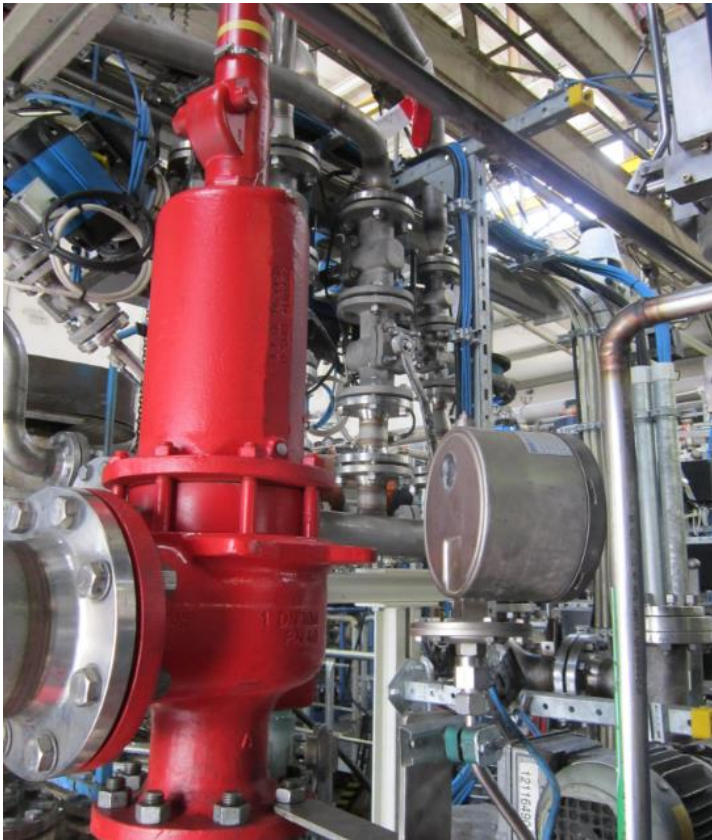


Figure 6.4.5-1: Safety valve with back pressure compensating bellows

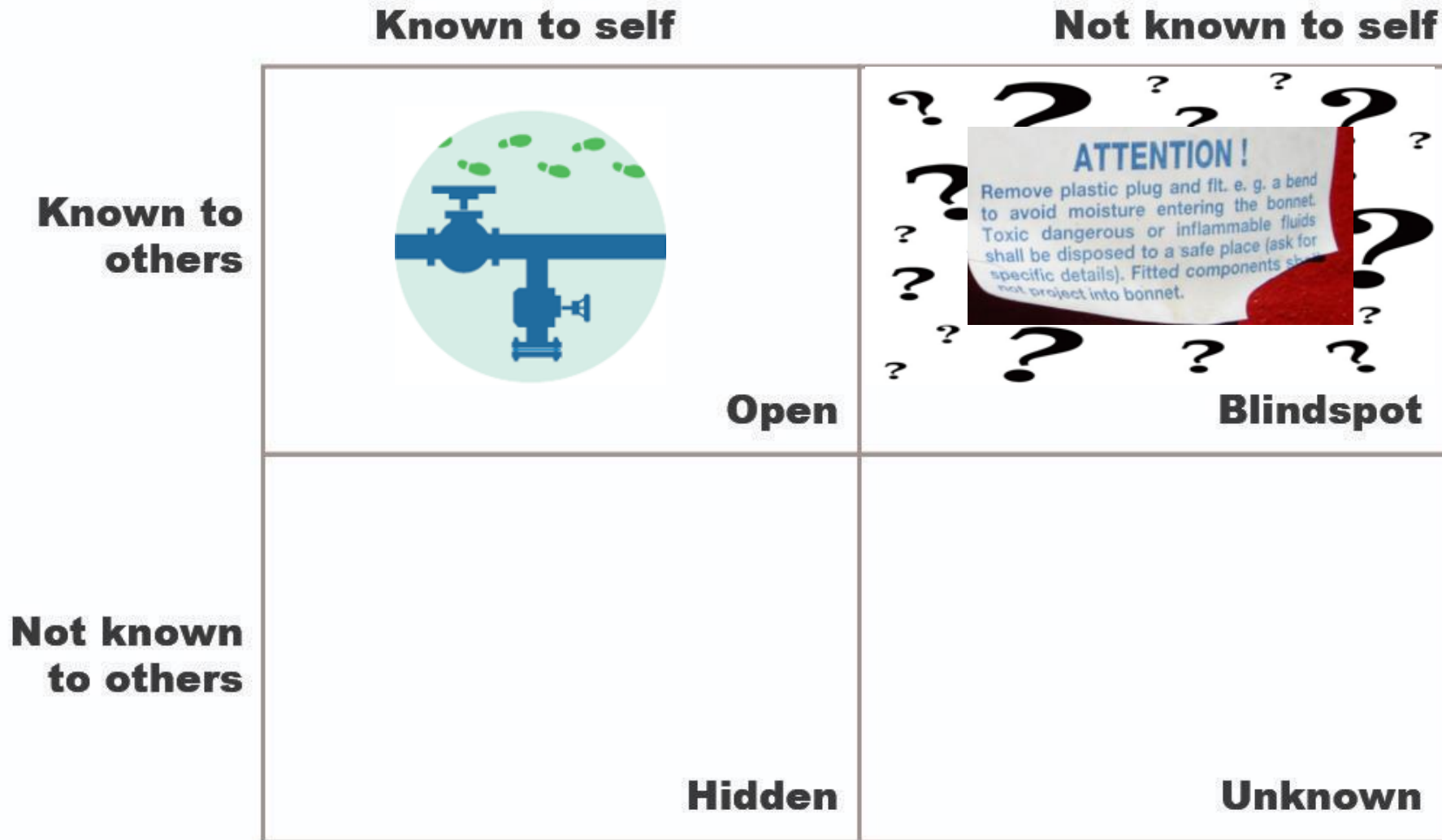
Finding with balanced-bellows safety valves



- In May 2022, PSM audits were done at plants in Bavaria, Germany.
- It was found that most of the balanced-bellows safety valves were wrongly installed
- According to the vendor, varying from their installation instructions is only permissible after clearance by the regulatory authority.
- The plants and inspection authority had no documentation to vary from the Leser instructions.



How to do a better job to find blind spots?



Thank you



Tip: please check that your balanced-bellows safety valves are okay