

# SAFETY MEMO

December 12<sup>th</sup>, 2022 – Double Seat Valves



Did you know?

## What is a double-seat valve?

A double-seat valve, also known as an "anti-mix valve" or "mixproof valve", is a type of piston valve that consists of two separate bodies separated by two seats, between which there is a cavity open to the atmosphere.

When the valve is closed, it allows the flow of two incompatible fluids through each body. When the valve is opened, the flow of a fluid from one body of the valve to the other becomes possible.

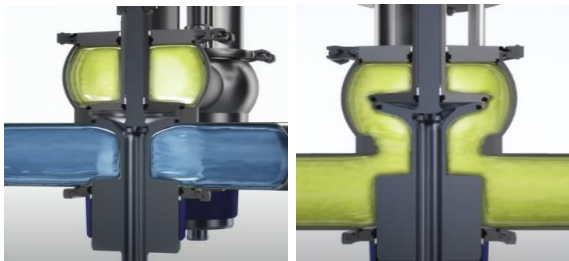


FIGURE 1 : CLOSED VALVE (LEFT); OPEN VALVE (RIGHT)

To avoid cross-contamination between the two pipes when the valve is closed, there are two seals between the separated pipes. If one seal fails, then fluid passes into the leakage chamber where it will be passed into the leakage outlet without mixing with product in the other pipe.



FIGURE 2 : GEA VIDEO EXCERPT - EXAMPLE OF A LEAK AT THE BOTTOM SEAL

## Applications of double-seat valves

These valves ensure the separation of incompatible products at pipe intersections while allowing easy interconnection between networks. A typical use is the addition of cleaning agents in various product networks. They replace connections that would otherwise be made manually, with bridging panels or using multiple valves. As a result, they reduce system complexity and eliminate manual connections while ensuring food and personnel safety.

Double-seat valves are usually grouped into a matrix.

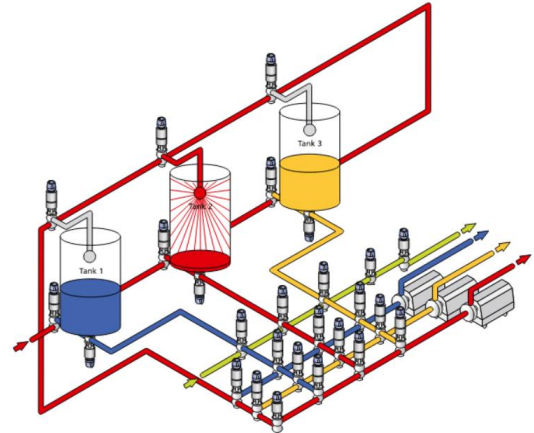


FIGURE 3 : DOUBLE-SEAT VALVES GROUPED INTO A "MATRIX"

## Health and safety benefits

Double-seat valves help to overcome the risk of chemical or thermal burns often encountered by operators when using manual fittings or bridging panels, such as:

- Pressure or residual material in piping
- Chemical leaks in work areas
- Erroneous connections
- Poor working ergonomics due to difficult connections

The risks to the health of consumers are also mixed, since it becomes possible to confirm the completion of the washing steps by monitoring valve faults

## References

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- Alfa Laval. Unique CP-3 valve resistant to mixing. 15 October 2014. Excerpt from <https://www.youtube.com/watch?v=lo-3MLRX0E>
- Alfa Laval. Aseptic Mixproof. Extract from <https://www.alfalaval.ca/products/fluid-handling/valves/double-seat-valves/aseptic-mixproof/>
- SPX Flow. D4 Series - Double Seat Mix Proof Valves. Extrait de <https://www.spxflow.com/waukesha-cherry-burrell/products/d4-series-double-seat-mix-proof-valves/>