

Diaphragms in GYLON® Style 3522

Case Study: Improving diaphragm valve performance in UHT dairy plant.



Industry

Food & Pharma

Customer

The customer designs and manufactures valves for sanitary applications. From Italy the valves are supplied to more than 110 countries. Their valves are accurate and reliable, and supported with high quality service.

Background

The manufacturer had an issue of service life with the standard two layer diaphragm in a UHT plant in dairy industry where the product temperature raises up to 150 °C continuously. They consulted Garlock to provide a safe solution for their end users by increasing diaphragm service life in aseptic and heavy duty applications.

Challenges faced

The manufacturer had the need to increase operating temperature up to 150 °C keeping good flexibility. Their previous solution was a double diaphragm, PTFE and EPDM backed. At 130 °C the glue between two parts started to melt and two diaphragms lost contact reducing performance.

The end user objective was to increase the diaphragm valves durability, which are used under critical conditions.

Operating Conditions

1. Media (process): Milk and milk product
2. Media (sterilization): Steam
3. Size (pipe/hose): from DN25 to DN100
4. Temperature (process): 80 °C
5. Temperature (sterilization): 150 °C
6. Pressure: 10 bar

Solution and Benefits

Garlock's engineering team worked closely with the customer developing customized sets of diaphragms which combined high temperature limits and flexibility. Garlock implemented diaphragms in GYLON® Style 3522. The valves were tested in third party plants, in UHT milk at 150 °C and 13,000 cycles and 8,000 working hours. GYLON® 3522 diaphragms are now specified in all of their aseptic valves.

The diaphragm valve has been designed for sterile applications which require safety in stopping flow and/or directing of product. Their diaphragm valve features a new membrane in GYLON® 3522 which ensures maximum operating performance and improved valve efficiency.

Thanks to this cooperation our customer is able to offer reliable valves for sterile applications which guarantee long lasting life for dairy, beverage, food and pharma applications.

For more information, please visit:

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