



GEMÜ diaphragms for aseptic and sterile applications

As a recognized diaphragm valve specialist, GEMÜ is represented in virtually all industrial sectors and applications. We are the leading supplier of stainless steel valves for aseptic and sterile applications in the pharmaceutical industry, biotechnology industry, as well as the foodstuff and beverage industries. The diaphragm, a central sealing element in the piping system, is of major importance. This is why GEMÜ leaves nothing to chance in the development and manufacture of diaphragms. In addition to developing compounds, this also includes producing and permanently controlling the diaphragms during the manufacturing process. Random sampling of the finished products completes the comprehensive test cycle.

GEMÜ quality is ensured by the following measures, among others:

- Raw materials are sourced from selected suppliers
- Comprehensive testing of the raw materials in our in-house laboratory or accredited institutions
- Storage of raw materials under controlled conditions
- Automated testing and documentation processes during production
- State-of-the-art production facilities
- The diaphragms are tested on our own test rigs (includes special test cycles for the pharmaceutical industry)

PTFE/EPDM diaphragms

The GEMÜ PTFE/EPDM diaphragms consist of a soft elastomer backing (EPDM) and a thermoplastic face made of chemically modified second-generation PTFE (TFMTM) and offer maximum chemical resistance. These two components are either firmly (GEMÜ code 54) or flexibly (GEMÜ code 5M) connected with each other. Under steam conditions, the PTFE material wears much slower than EPDM.

Areas of application

- Suitable for use at permanently high temperatures and for steam
- Resistant to virtually all chemicals, such as strong acids, alkalis and salts
- Can be used, for example, to produce pharmaceuticals or to distribute WFI
- Insensitive to solvents, chlorine and aromatic hydrocarbons

Technical specifications

- **Media temperature:**
-10 to 100 °C
- **Sterilization temperature*:**
Max. 150 °C, without any time limit per cycle

* depending on version and/or operating parameters

One-piece diaphragm code 54

- With fabric-reinforced EPDM backing (diaphragm size 25 to 100)
- Simple assembly thanks to the rubber pin that is vulcanized in place (diaphragm size 8)
- Simple and defined assembly thanks to the threaded pin that is vulcanized in place with integrated screw-in stop (diaphragm size 10 to 100)
- Available in diaphragm sizes 8 to 100
- Conformities and approvals:
BSE/TSE | FDA | Oxygen | Ozone resistance |
Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 |
TA Luft (German Clean Air Act) | USP



One-piece: GEMÜ code 54
Diaphragm size 25

Two-piece diaphragm code 5M

- With fabric-reinforced EPDM backing
- Excellent long-term tightness and vacuum compatibility thanks to improved geometry
- Extremely long service life
- Leak detection holes in the EPDM backing
- Easy-to-read identification
- Simple and defined assembly thanks to the threaded pin that is sintered in place with integrated screw-in stop (diaphragm size 10 to 100)
- Available in diaphragm sizes 10 to 100
- Conformities and approvals:
BSE/TSE | EHEDG | FDA | Oxygen | Ozone resistance |
Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 |
TA Luft (German Clean Air Act) | USP



Two-piece: GEMÜ code 5M
Diaphragm size 80

EPDM diaphragms

EPDM diaphragms consist of soft elastomer rubber mixtures, which are peroxidically cross-linked (vulcanized) with each other. This enables the diaphragms to be used safely, even at high media temperatures. The higher the temperature load capability, the shorter the service life in relation to the mechanical load. Therefore both the temperature load and the deformability of EPDM diaphragms must be optimally adjusted to the application.

Areas of application

- High level of insensitivity to mechanically contaminated working media (e.g. cellular lumps, solid matter or catalytic solid matter)
- Ideally suited for all areas with hygienic requirements as well as for CIP/SIP processes
- Suitable for abrasive media
- Resistant to many acids, alkalis and diluted saline solutions
- Suitable for inert gases and many other process gases
- Can only be used for oils and greases under certain conditions

Technical specifications

- **Media temperature:**
-10 to 100 °C
- **Sterilization temperature*:**
Max. 150 °C, with time limit per cycle

* depending on version and/or operating parameters

Diaphragm code 19

- Fabric-reinforced (diaphragm size 10 to 100)
- Low signs of wear and optimized setting behaviour
- High performance capability thanks to improved positioning of the fabric insert
- Greatly reduced adhesive behaviour (no adhesion on the valve seat) of the diaphragm as a result of new material compounding
- High sealing values and low reforming through steam
- Extremely long service life thanks to improved material properties
- Simple assembly thanks to the rubber pin that is vulcanized in place (diaphragm size 8)
- Simple and defined assembly thanks to the threaded pin that is vulcanized in place with integrated screw-in stop (diaphragm size 10 to 100)
- Available in diaphragm sizes 8 to 100
- Conformities and approvals:
BSE/TSE | FDA | Oxygen | Ozone resistance |
Regulation (EC) No. 1935/2004 |
TA Luft (German Clean Air Act) | USP



GEMÜ code 19
Diaphragm size 25

EPDM diaphragms

Diaphragm code 3A/code 13

- Not fabric-reinforced
- With long-term reliability
- High level of customer satisfaction
- Simple assembly thanks to the rubber pin that is vulcanized in place (GEMÜ code 3A for diaphragm size 8)
- Simple and defined assembly thanks to the threaded pin that is vulcanized in place with integrated screw-in stop (GEMÜ code 13 for diaphragm size 10 to 100)
- Available in diaphragm sizes 8 to 100
- Conformities and approvals:
BSE/TSE | FDA | Oxygen | Ozone resistance |
Regulation (EC) No. 1935/2004 | USP



Diaphragm code 17

- Fabric-reinforced
- High tear resistance/low cracking
- High thermal load capability (hot/cold)
- Simple assembly thanks to the rubber pin that is vulcanized in place (diaphragm size 8)
- Simple and defined assembly thanks to the threaded pin that is vulcanized in place with integrated screw-in stop (diaphragm size 10 to 100)
- Available in diaphragm sizes 8 to 100
- Conformities and approvals:
BSE/TSE | FDA | Oxygen | Ozone resistance | Regulation
(EC) No. 1935/2004 | TA Luft (German Clean Air Act) | USP

