GEMÜ Code 54

PTFE/EPDM diaphragm

Features

- Fabric reinforced EPDM backing (diaphragm size 25 to diaphragm size 100)
- Simple mounting thanks to the rubber pin that is vulcanized in place (diaphragm size 8)
- Simple and defined mounting thanks to the threaded pin that is vulcanized in place with integrated screw-in stop (diaphragm size 10 to diaphragm size 100)

Description

The GEMÜ code 54 diaphragm consists of a PTFE face and a peroxide-cured EPDM backing, which are securely connected to one another (fully laminated). An FKM backing is also available for highly permeating media (GEMÜ code 56). The diaphragm combines all the advantages of PTFE with the flexibility of an elastomer diaphragm in one product. In order to optimize the entire system, both the PTFE face and the diaphragm backing are compounded for GEMÜ and manufactured within the GEMÜ Group.

Technical specifications

- **Media temperature :** -10 to 100 °C
- **Sterilization temperature:** max. 150 °C
- **Diaphragm materials:** PTFE/EPDM
- **Diaphragm sizes:** 8 l 10 l 20 l 25 l 40 l 50 l 65 l 80 l 100 l 125 l 150
- **Conformities:** BSE/TSE l FDA l Oxygen l Ozone resistance l Reg. (EU) No. 10/2011 l Regulation (EC) No. 1935/2004 l TA Luft (German Clean Air Act) l USP

Technical data depends on the respective configuration

Product comparison

	GEMÜ Code 3A/13	GEMÜ Code 17	GEMÜ Code 19	GEMÜ Code 29	GEMÜ Code 36	GEMÜ Code 54	GEMÜ Code 5M
Media temperature	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C
Sterilization temperature [1]	max. 150 °C	max. 150 °C	max. 150 °C	Not sterilizable	max. 150 °C	max. 150 °C	max. 150 °C
Diaphragm materials							
EPDM	●	●	●	●	●	-	-
PTFE/EPDM	-	-	-	-	-	●	●
Diaphragm sizes							
8	●	●	●	-	●	●	-
10	●	●	●	●	●	●	●
20	-	-	-	●	-	●	-
25	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●
65	-	-	-	●	-	●	-
80	●	●	●	●	-	●	●
100	●	●	●	●	-	●	●
125	-	-	-	-	-	●	-
150	-	-	-	●	-	●	-
200	-	-	-	●	-	-	-
Conformities							
BSE/TSE	●	●	●	●	●	●	●
EHEDG	-	-	-	-	-	-	●
FDA	●	●	●	-	●	●	●
Oxygen	●	●	●	-	-	●	●
Ozone resistance	●	●	●	-	●	●	●
Reg. (EU) No. 10/2011	-	-	-	-	-	●	●
Regulation (EC) No. 1935/2004	●	●	●	-	●	●	●
TA Luft (German Clean Air Act)	●	●	●	-	●	●	●
USP	●	●	●	-	●	●	●

[1] The duration of sterilization is limited for some diaphragms; see technical data.

Each application must be analysed before the selection of the diaphragm material. Since the most varied operating conditions often prevail within a plant at different locations, it can be necessary to use different valves and materials. In particular, the chemical properties and the temperature of the working media often lead to different interactions. The suitability of the materials used must therefore always be examined individually with regard to the current resistance list or checked by an authorised specialist. Only this procedure guarantees that the application will operate safely and economically for a longer period. Diaphragms are wearing parts. They need to be regularly inspected and replaced otherwise malfunctions can occur, possibly resulting in hazardous situations.

Please note: The maintenance intervals for inspecting and replacing diaphragms are application-dependent. In order to determine a suitable maintenance interval, the maintenance history and the stresses placed on the parts due to frequent sterilisation or frequent cycle duties must be taken into account.

Product description

Construction

Diaphragm size 8
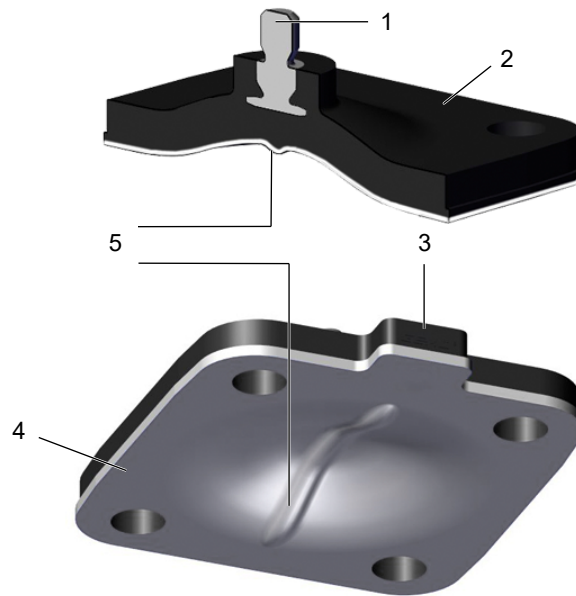
Diaphragm size 25

Item	Name
1	Threaded pin vulcanized in place with integrated screw-in stop
2	EPDM back
3	Tab
4	PTFE face
5	Sealing bead for reliable sealing on the valve weir
6	Rubber pin

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.

Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO".

For electronic identification purposes, each replaceable component contained in the product you have purchased is equipped with an RFID chip (1). Where you can find the RFID chip differs from product to product.
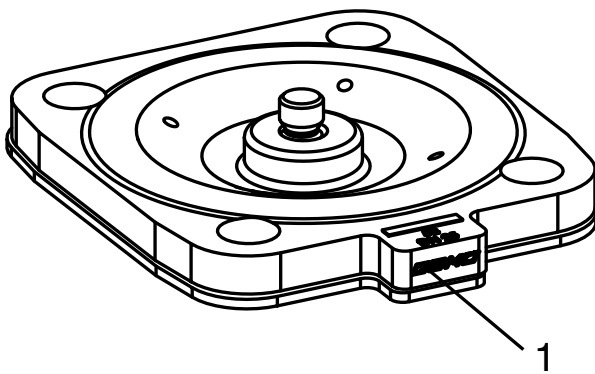

Fig. 1: Diaphragm RFID chip

Availability

Special version	Packaging unit	Type of design
Without	Without	Without
S	Without	Without
Without	P01	Without
Without	Without	0101
Without	Without	0104

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Diaphragm	600

2 Diaphragm size	Code
Diaphragm size 8	8
Diaphragm size 10	10
Diaphragm size 20	20
Diaphragm size 25	25
Diaphragm size 40	40
Diaphragm size 50	50
Diaphragm size 80	80
Diaphragm size 100	100

3 Replacement diaphragm	Code
Replacement diaphragm	M

4 Diaphragm material	Code
PTFE/EPDM one-piece	54

5 Packaging unit	Code
Without	

5 Packaging unit	Code
Packaging unit 1 piece for Pharma applications, including inspection certificate 3.1 and FDA certificate of conformity	P01

6 Type of design	Code
Without	
Media wetted area cleaned to ensure suitability for paint applications, parts sealed in plastic bag	0101
Media wetted parts cleaned for high purity media and packed in plastic bag	0104

7 Special version	Code
Without	
Special version for oxygen, maximum medium temperature: 60°C	S

8 CONEXO	Code
Without	
Integrated RFID chip for electronic identification and traceability	C

Order example

| Ordering option	Code	Description
1 Type	600	Diaphragm
2 Diaphragm size	10	Diaphragm size 10
3 Replacement diaphragm	M	Replacement diaphragm
4 Diaphragm material	54	PTFE/EPDM one-piece
5 Packaging unit		Without
6 Type of design		Without
7 Special version		Without
8 CONEXO		Without

Technical data

Medium

Working medium:	Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the diaphragm material.

Temperature

Media temperature:	-10 — 100 °C
	for special function S: -10 – 60 °C

Sterilization temperature: max. 150 °C [1], no time limit per cycle [2]

1) The sterilization temperature is only valid for steam (saturated steam) or superheated water.

2) PTFE diaphragms can also be used as steam barriers; however, this will reduce their service life. This also applies to PTFE diaphragms exposed to high temperature fluctuations. The maintenance cycles must be adapted accordingly. GEMÜ 555 and 505 globe valves are particularly suitable for use in the area of steam generation and distribution. The following valve arrangement for interfaces between steam pipes and process pipes has proven itself over time: A globe valve for shutting off steam pipes and a diaphragm valve as an interface to the process pipes.
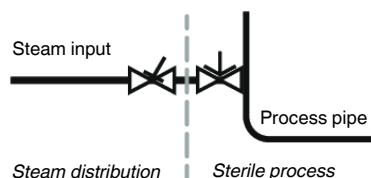
Storage temperature:	-10 °C — 25 °C (preferably 15 °C) must be observed

Pressure

Operating pressure:	max. 10 bar (dependent on the diaphragm valve used)
Vacuum:	Can be used up to a vacuum of 70 mbar (absolute)

Product compliance

|	
Food:	Regulation (EC) No. 1935/2004
	Regulation (EC) No. 2023/2006
	Regulation (EC) No. 10/2011
	FDA 21 CFR 177.1550
	USP Class VI Title 87
	USP Class VI Title 88 (50 °C and 121 °C)
	Japanese Food Contact Material Act
Ozone resistance:	Diaphragm material is resistant to a maximum concentration of ozone of 0.2 mg/l (dissolved in water)
TA Luft (German Clean Air Act):	The product complies with the equivalence requirements of section 5.2.6.4 of the German Clean Air Act (TA Luft / VDI 2440 according to section 3.3.1.3)
Oxygen:	BAM compliant, the product is suitable for application with oxygen
BSE/TSE:	The product conforms to EMA/410/01 revision 3 and is free of animal substances

|	
Unused components:	Asbestos
	Natural or synthetic latex
	PVC
	2-Mercaptobenzothiazole
	Bis(2-ethylhexyl) phthalate (DEHP)
	Bis(n-butyl) phthalate (DnBP DBP)
	Bisphenol-A (SPA)
	Butyl benzyl phthalate (BBP)
	Diethyl phthalate (DEP)
	Diisodecyl phthalate (DIDP)
	Diisononyl phthalate (DINP)
	Dimethyl phthalate (DMP)
	Di-n-octyl phthalate (DNOP)
	N-nitrosamines

Mechanical data

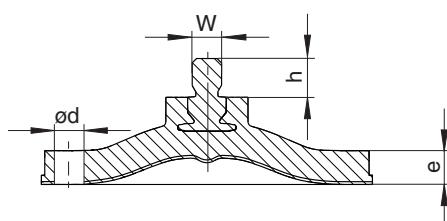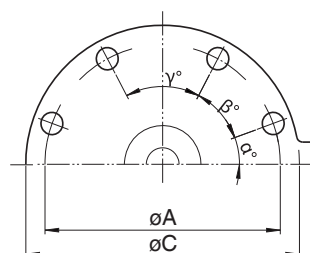|	
Service life:	Max. recommended service life, 8 years
	The service life is the sum of the storage life and operating life.
	Note the Technical Information "Service life, storage and marking of GEMÜ diaphragms".

Dimensions

PTFE diaphragms
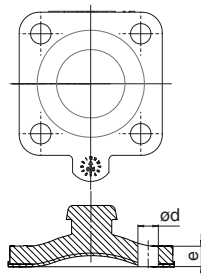
MG 8
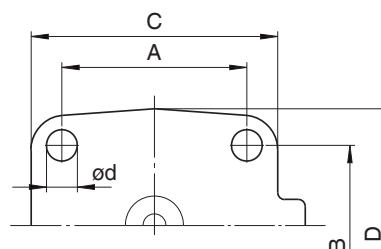
MG 8 to 80

MG 10 to 100

MG 100

MG	DN	NPS	A	B	C	D	ød	e	h	W	α	β	γ	n
8	4 - 15	1/4" - 1/2"	22.0	22.0	31.5	31.5	4.5	4.0	5.6	-	-	-	-	4
10	10 - 20	3/8" - 3/4"	39.0	44.0	48.0	53.0	5.2	5.5	9.0	M4	-	-	-	4
20	15 - 25	1/2", 3/4", 1"	44.5	40.0	61.5	57.0	6.4	5.0	9.0	5/32"	-	-	-	4
25	15 - 25	1/2" - 1"	54.0	46.0	72.0	67.0	9.0	7.0	8.0	1/4"	-	-	-	4
40	32 - 40	1¼" - 1½"	70.0	65.0	100.0	90.0	11.0	8.0	8.0	1/4"	-	-	-	4
50	50	2"	82.0	78.0	124.0	106.0	12.7	8.0	7.0	1/4"	-	-	-	4
80	80	3"	127.0	114.0	186.0	156.0	18.0	11.5	8.0	5/16"	-	-	-	4
100	100	4"	196.2	-	230.0	-	13.0	11.0	9.0	5/16"	28.0°	42.0°	40.0°	8

Dimensions in mm
n = number of bolt holes
The thread of the diaphragm pin "W" corresponds to Whitworth standard.