

## **GEMÜ Code 5E**

### **PTFE/EPDM diaphragm**



### **Features**

- Fabric reinforced EPDM backing
- Insensitive also at higher temperatures
- High chemical resistance due to PTFE face
- Simple mounting thanks to a threaded pin that is sintered into place

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### **Description**

The GEMÜ code 5E diaphragm consists of a PTFE face and a peroxide-cured EPDM back, which are joined by a flexible connection. The PTFE used is a chemically modified second generation PTFE - called TFM™. The two-piece 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 back 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 : 25 | 40 | 50 | 80
- \* depending on version and/or operating parameters

## Product comparison



	GEMÜ Code 3A/13	GEMÜ Code 17	GEMÜ Code 19	GEMÜ Code 29	GEMÜ Code 36	GEMÜ Code 54	GEMÜ Code 5M
<b>Media temperature</b>	-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
<b>Sterilization temperature (see "", page 000)</b>	max. 150 °C	max. 150 °C	max. 150 °C	Not sterilizable	max. 150 °C	max. 150 °C	max. 150 °C
<b>Diaphragm materials</b>							
EPDM	●	●	●	●	●	-	-
PTFE/EPDM	-	-	-	-	-	●	●
<b>Diaphragm sizes</b>							
8	●	●	●	-	●	●	-
10	●	●	●	●	●	●	●
20	-	-	-	●	-	●	-
25	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●
65	-	-	-	●	-	●	-
80	●	●	●	●	-	●	●
100	●	●	●	●	-	●	●
125	-	-	-	●	-	●	-
150	-	-	-	●	-	●	-
200	-	-	-	●	-	-	-
<b>Conformities</b>							
BSE/TSE	●	●	●	●	●	●	●
FDA	●	●	●	-	●	●	●
Oxygen	●	-	●	-	-	●	●
Reg. (EU) No. 10/2011	-	-	-	-	-	●	●
Regulation (EC) No. 1935/2004	●	●	●	-	●	●	●
TA Luft (German Clean Air Act)	●	●	●	-	●	●	●
USP	●	●	●	-	●	●	●

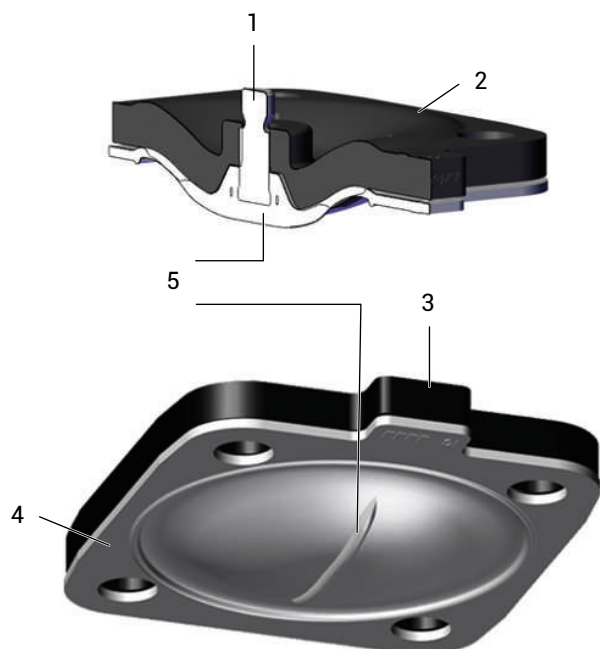
Each application must be analysed before the selection of the diaphragm material. Since the most varied operating conditions often prevail within a plant at different locations, it can be necessary to use different valves and materials. In particular, the chemical properties and the temperature of the 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



Item	Name
1	Threaded pin sintered in place
2	EPDM back
3	Tab
4	PTFE face
5	Sealing bead for reliable sealing on the valve weir

## 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](http://www.gemu-group.com/conexo)

### Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).

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.

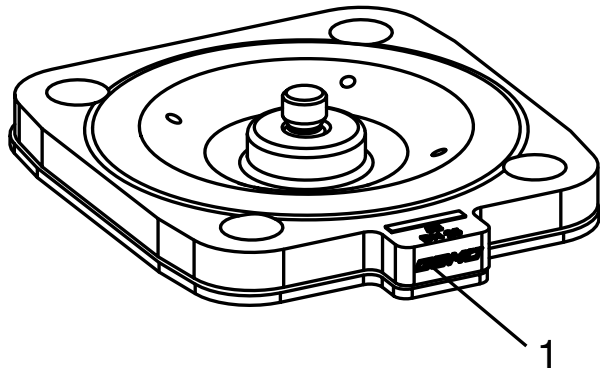


Fig. 1: Diaphragm RFID chip

## 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 25	25
Diaphragm size 40	40
Diaphragm size 50	50
Diaphragm size 80	80

3 Replacement diaphragm	Code
Replacement diaphragm	M

4 Diaphragm material	Code
PTFE/EPDM	5E

5 Packaging unit	Code
Without	

5 Continuation of 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
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	80	Diaphragm size 80
3 Replacement diaphragm	M	Replacement diaphragm
4 Diaphragm material	5E	PTFE/EPDM
5 Packaging unit		Without
6 Type of design		Without
7 Special version	S	Special version for oxygen, maximum medium temperature: 60 °C
8 CONEXO		Without

## Technical data

### Medium

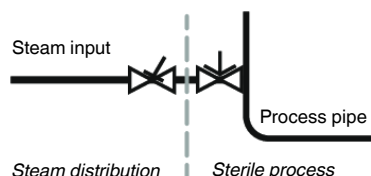
**Working medium:** Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the diaphragm material.

### Temperature

**Media temperature:** Standard: -10 °C bis 100 °C  
Special version for oxygen 0 °C to 60 °C

**Sterilization temperature:** max. 150 °C<sup>1)</sup>, no time limit per cycle<sup>2)</sup>

- 1) The sterilization temperature is only valid for steam (saturated steam) or superheated water.
- 2) PTFE diaphragms can also be used as moisture 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 to 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)

**Ozone resistance:** We hereby certify that this GEMÜ PTFE/EPDM 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

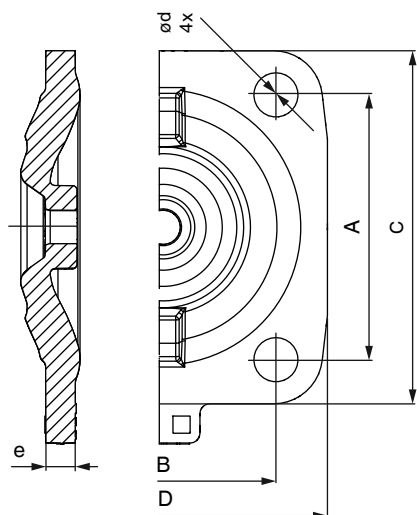
**Unused components:** Natural or synthetic latex  
Asbestos

## 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

### EPDM back

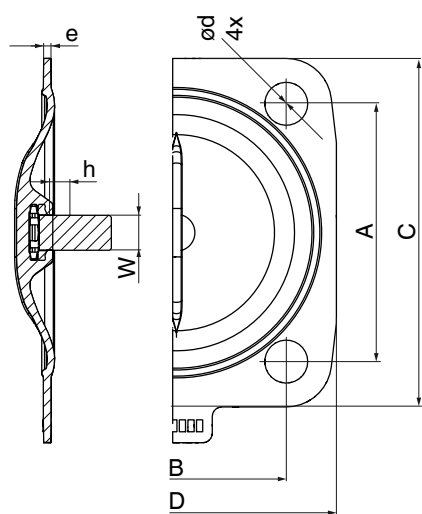


MG	DN	NPS	A	B	C	D	ød	e	n
25	15 - 25	1/2" - 1"	54.0	46.0	72.0	67.0	9.0	6.0	4
40	32 - 40	1¼" - 1½"	70.0	65.0	100.0	90.5	11.0	7.0	4
50	50	2"	82.0	78.0	124.0	106.0	13.7	6.0	4
80	80	3"	127.0	114.0	186.0	156.0	18.0	7.2	4

Dimensions in mm, MG = diaphragm size  
 The thread of the diaphragm pin "W" corresponds to Whitworth standard.



## PTFE face



PTFE face

MG	DN	NPS	A	B	C	D	ød	e	h	W	n
25	15 - 25	1/2" - 1"	54.0	46.0	72.0	67.0	9.0	1.5	12.0	1/4"	4
40	32 - 40	1 1/4" - 1 1/2"	70.0	65.0	100.0	90.0	11.0	1.5	13.7	1/4"	4
50	50	2"	82.0	78.0	124.0	106.0	13.5	1.5	20.0	1/4"	4
80	80	3"	127.0	114.0	186.0	156.0	18.0	2.0	20.0	5/16"	4

Dimensions in mm, MG = diaphragm size

The thread of the diaphragm pin "W" corresponds to Whitworth standard.

