# BUTTERFLY VALVE

PTFE-lined | series K

## Advantages

Centric valve disc with firm, clearance-free disc / stem connection

Complete body is lined with PTFE (min. 3 mm)

Permanent sealing with full chemical resistance

Very aggressive and corrosive media are transported safely

Option: Pharmaceutical version/ cavityfree with smooth PTFE sealing surfaces to the flange also as conductive version with FDA approval

CE TA-LUFT VDI 2440 FDA APPROVED EC 1935/2004 Ex

# TECHNICAL FEATURES

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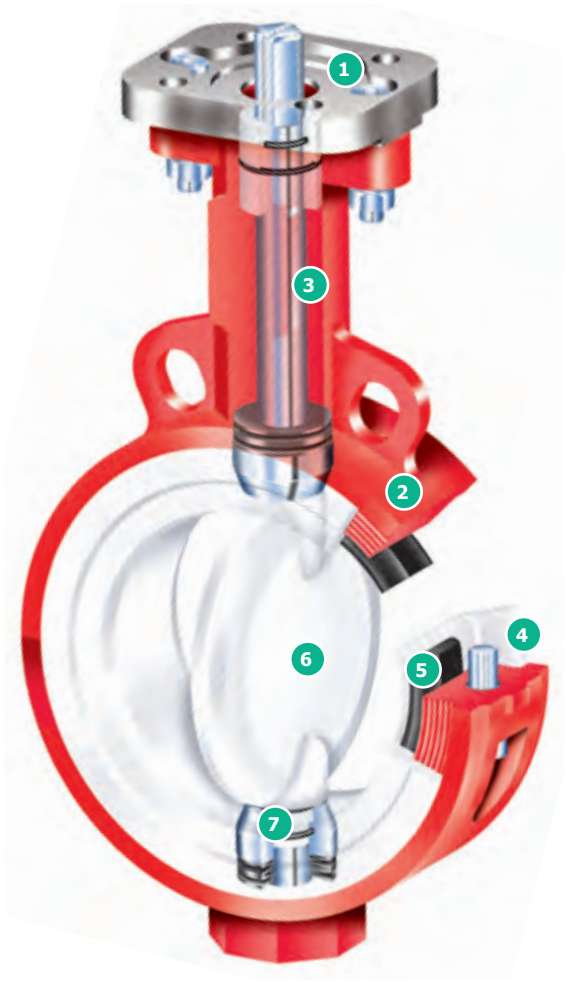
## Efficient and safe automation with the interchangeable flange GEFA-MULTITOP




### 1 Standard mounting flange

- Standard mounting flange according to EN ISO 5211
- Direct actuator mounting without interruption of the stem
- Variable and exchangeable for any actuator size
- Actuator protection against leakage

### 2 Two-piece body

Standard face-to-face dimension, very servicefriendly, simple exchange of internal parts only possible because of the two-piece body design.

### 3 Bearing bush with O-ring seal

### 4 PTFE-seat ring

In solid design (3 mm), diffusion-resistant, ensures a permanent sealing at the stem passage, in the shut-off and to the flanges.

### 5 Elastomer spring element

Exactly fitted flexible ring of MVQ or EPDM behind the PTFE seat ring ensures flexible sealing of the shut-off.

### 6 PTFE valve disc

Solid (4 mm) PTFE- / PFA-coated stainless-steel carrier with stem protection in the primary sealing area.

### 7 Primary sealing

Integrated in the seat ring, guarantees the cavity-free andpressure-resistant sealing to the outside. Pressure is applied by the spring-loaded thrust bearings.

# THE TYPES

Butterfly valve | PTFE-lined | series K

## Type KG 6

DN 50 – DN 300

**Technical Data**
Wafer type butterfly valve for installation between flanges EN 1092, PN 10/16, ASME class 150.

Two-piece body, selfcentring, one-piece valve disc and stem, bubble-tight up to 10 bar.

**Face-to-face dimension**
DIN EN 558 line 20
API 609 table 1

**Mounting flange**
DIN EN ISO 5211

**Test**
DIN EN 12266 P10 P11 P12
Leakage rate A

## Type KG 8

DN 50 – DN 300

**Technical Data**
Lug type butterfly valve for installation between flanges EN 1092, PN 10/16, ASME class 150.

Two-piece body, selfcentring, one-piece valve disc and stem, bubble-tight up to 10 bar.

The pipeline can be removed from the flange on one side.

**Face-to-face dimension**
DIN EN 558 line 20
API 609 table 1

**Mounting flange**
DIN EN ISO 5211

**Test**
DIN EN 12266 P10 P11 P12
Leakage rate A

## Type K 16

DN 350 – DN 600

**Technical Data**
Wafer type butterfly valve for installation between flanges EN 1092, PN 10/16, ASME class 150.

Two-piece body, selfcentring, one-piece valve disc and stem, bubble-tight up to 10 bar.

**Face-to-face dimension**
DIN EN 558 line 20
API 609 table 1

**Mounting flange**
DIN EN ISO 5211

**Test**
DIN EN 12266 P10 P11 P12
Leakage rate A

## Type K 18

DN 350 – DN 600

**Technical Data**
Lug type butterfly valve for installation between flanges EN 1092, PN 10/16, ASME class 150.

Two-piece body, selfcentring, one-piece valve disc and stem, bubble-tight up to 10 bar.

The pipeline can be removed from the flange on one side.

**Face-to-face dimension**
DIN EN 558 line 20
API 609 table 1

**Mounting flange**
DIN EN ISO 5211

**Test**
DIN EN 12266 P10 P11 P12
Leakage rate A

## Type KG 6 / KG 8
DN 50 – DN 300

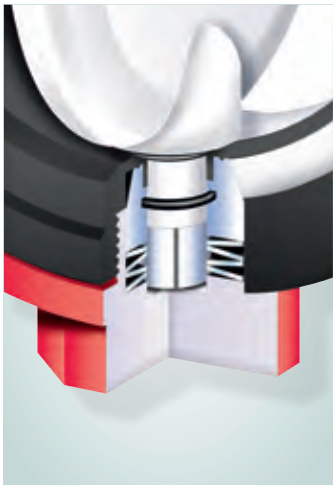
**Seat ring**
**PTFE standard**

PTFE standard seat ring of pure PTFE in solid design (3 mm), completely diffusion-resistant.

Elastomer spring element as exactly fitted flexible ring of MVQ or EPDM behind thePTFE seat ring ensures a flexible sealing of the shutoff.

Ensures the permanent sealing at the stem passage, in the shut-off and to the flanges.

Range of application -30 °C to 180 °C depending on the elastomer.



## Type KG 6/KG 8
DN 50 – DN 300

**Seat ring**
**PTFE carbon/**
**PTFE conductive**

PTFE carbon seat ring as a mixture with a carbon content of 25 % for an increased strength and improved temperature resistance.

PTFE conductive seat ring as a mixture with a carbon content of approx. 1 %.

Ensures the electrical conductivity, which meets the requirements of the ATEX directive.

Range of application -30 °C to 200/180 °C depending on the elastomer.

## Type KG 6/KG 8
DN 50 – DN 300

**Seat ring**
**PTFE pharmaceutical version**

PTFE seat ring of pure PTFEin solid design (3 mm), completely diffusion-resistant without return at the flange sealing surface.

Therefore, completely cavityfree structure for the use in the food production or in the pharmaceutical area.

Range of application -30 °C to 180 °C depending on the elastomer.

## Type KG 6/KG 8
DN 50 – DN 300

**Seat ring**
**PTFE carbon/conductive pharmaceutical version**

Seat ring of PTFE carbon in solid design (3 mm), completely diffusion-resistant without return at the flange sealing surface according to the FDA directives.

For the use in the food production and in the pharmaceutical industry, where a conductivity according to the ATEX directive and conformity with the FDA is required.

Range of application -30 °C to 180 °C depending on the elastomer.

## Primary sealing

The primary sealing of the stem passage is adjusted to a defined value via the spring-loaded stainless steel thrust bearing. The medium is already shut off securely at this contact surface (supported by an additional PTFE-flexible sealing) between the primary sealing surface of the valve disc and the preloaded PTFE lining.

The valve stem does not come into contact with the medium. A gas lock at the stem outlet is phased as additional – third – barrier directly behind the primary sealing. This "threefold sealing" ensures the completely tight function to the outside and prevents leakages into the space inside the body behind. This is the most secure and effective method in order to counteract the emissions according to the TA-Luft (German Technical Regulations on Emissions).

The PTFE-lined butterfly valves are already tested and certified according to the standard version of the current directives of the TA-Luft / VDI 2440.

Aggressive and corrosive media are shut off, controlled and regulated safely with the chemical valve – PTFE-lined and centric. The material PTFE ensures an almost unlimited use with full chemical resistance. The minimum material thickness is even exceeded in important areas, in order to ensure a high diffusion resistance. Only two components come into contact with the medium: valve disc and seat ring.

A typical application is the use in the food production and in the pharmaceutical area thanks to the completely cavity-free structure and the physiologically neutral characteristic of the PTFE material where product contact can occur.

The dual spring-loading principle behind the seat ring ensure a permanent sealing in the shut-off.

The sealing function is achieved reliably at the full circumference of the shut-off with the "spring element" elastomer insert behind the PTFE lining.

The primary sealing of the stem passage is spring-loaded separately by means of precisely adjusted disc spring washers.

## Pressure and temperature range diagram

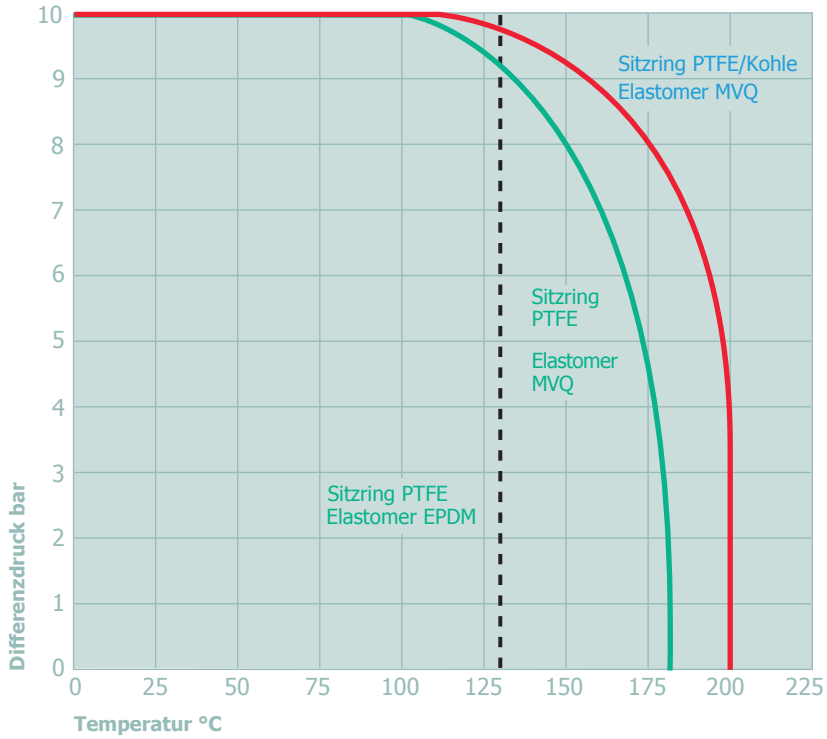
**Control range**
20° – 60° opening angle

**Valves DN 50 to DN 500**
max. differential pressure 10 bar

**Vacuum-tight**
DN 50 – to DN 300: up to 1 mbar(a)
from DN 350 to 200 mbar(a) for the temperature range - 10 °C to + 100 °C

**PTFE (polytetrafluorethylene) with EPDM elastomer**
Operating temperature:
- 20 °C to + 130 °C
with MVQ or FPM elastomer
Operating temperature: up to + 180 °C

**PTFE / carbon**
(Reinforced polytetrafluorethylene with a carbon content of 25 % as filler material) with silicone elastomer
Operating temperature: up to + 200 °C




The pressure and temperature range diagram shows the application limits of the different seat ring materials. These limits apply to the intended use. Process variables and characteristics of the medium can influence the values of the diagram. Temperatures below 0 °C upon request.

## Available materials

| Code | Body |
|---|---|
| 22 | Grey cast iron GG25 / EN GJL-250 |
| 24 | Ductile iron GGG40.3<br>EN-GJS-400-18-LT |
| 44 | Cast steel GS-C25 / EN GP 240 H+N |
| 66 | Stainless steel 1.4408 |
| 6A | Stainless steel 1.4408 |

| Code | Valve disc |
|---|---|
| 66 | Stainless steel 1.4517 |
| 31 | Stainless steel 1.4517, poliert |
| 69 | 1.4529 |
| 77 | PTFE lined |
| 76 | PFA lined |
| 75 | PTFE, conductive, lined |
| 93 | Alloy C22 |
| 94 | Titanium |

| Code | Seat ring |
|---|---|
| T | PTFE |
| TK | PTFE/carbon |
| TT | PTFE pharmaceutical version/cavity-free |
| TL | PTFE, conductive |
| TF | TFM |
| U | UHMWPE |
| TLT | PTFE, conductive, cavity-free |