

HIGH PERFORMANCE BUTTERFLY VALVE

Triple offset | type HGT

GEFA
PROCESSTECHNIK GMBH
www.gefa.com

Advantages

Tight shut-off in both pressure directions

Temperature range up to + 450 °C

Frictionless switching to the laminated seat

Installation of the laminated seat in the body

Secure stem sealing
(Option: TA-Luft)

GEFA-MULTITOP

Efficient automation with variable interface without interruption of the stem

Pivoting angle limitation and optical position indicator at the stem prevents wrong position of the stem during servicing

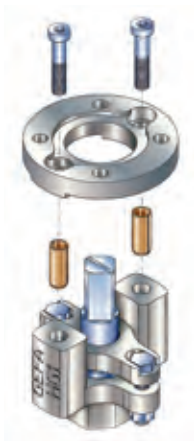
Corresponds to the norm EN 593



TECHNICAL FEATURES

High performance butterfly valve | triple offset | type HGT

Efficient and safe automation with the interchangeable flange GEFA-MULTITOP



1 Automation

- Standardized mounting flange acc. to DIN3337/ISO5211
- Direct mounting of actuator, allowing correct alignment
- Variable topworks arrangements, allowing for different actuator sizes to be mounted

2 TA-Luft tested safety (optional)

Adjustable stem sealing, located below the top flange, allowing adjustment without removing the actuator.

3 Long service life

The insert ring, mounted with its orientation against the direction of flow, actively protects the integrated laminated seat/seal from premature erosion and wear, providing longer service life and reduced costs and downtime.

4 Insert ring

Pressure-sealed bolted design – located outside of the flange sealing surface according to TA-Luft.

5 Reliability

Due to the design of the seat, triple offset valves are torque-seated. Therefore the actuator torque is constantly used to ensure contact pressure between the seating surfaces. This is necessary to provide zero leakage performance.

6 Exact and variable

Face-to-face dimension: EN 558, line 20 (25/16)

7 Bearing

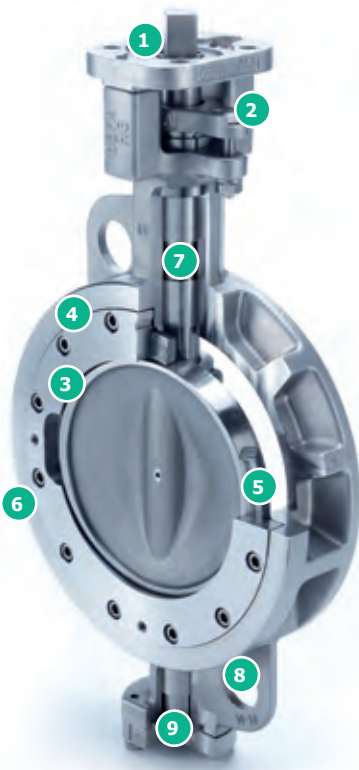
- Stem bearings absorb adverse loads and securely support the stem
- Continuous secured stem guidance provides maximum support for the single-piece shaft constructed of high-tensile materials

8 Precise mounting

Simple and precise mounting using wafer body location holes for all face-to-face dimensions.

9 Axial securing

Axial securing device and hardened axial securing ring ensure perfect stem and disc alignment, positioned away from the medium and built into the bottom flange.



THE TYPES

High performance butterfly valve | triple offset | type HGT



Type HGT 1

DN 80 – DN 300

Triple offset valve as wafer type butterfly valve for high pressure and temperature loads

Wafer style

Technical Data

For installation between flanges
EN 1092, PN 10/16/25/40, PS 25, ASME CI 150/300, PS25

Temperature range

-50 °C to +400 °C

Vacuum: up to 1 mbar (abs)

FireSafe according to: DIN EN ISO 10497 and API 607

Face-to-face dimension

DIN EN 558 line 20

Optional: line 25 and line 16

API 609 table 1

Mounting flange

DIN EN ISO 5211

Test

DIN EN 12266 P10 P11 P12 F20

Marking

DIN EN 19, AD 2000



Type HGT 7

DN 80 – DN 300

Triple offset valve with lugs for high pressure and temperature loads

Can be removed from the flange on both sides

Technical Data

For installation between flanges
EN 1092, PN 10/16/25/40, PS 25, ASME CI 150/300, PS25

Temperature range

-50 °C to +400 °C

Vacuum: up to 1 mbar (abs)

FireSafe according to: DIN EN ISO 10497 and API 607

Face-to-face dimension

DIN EN 558 line 20

Optional: line 25 and line 16

API 609 table 1

Mounting flange

DIN EN ISO 5211

Test

DIN EN 12266 P10 P11 P12 F20

Marking

DIN EN 19, AD 2000

DETAILED SOLUTIONS

High performance butterfly valve | triple offset | type HGT



Laminated seat

The laminated stainless steel/graphite seat ensures bidirectional, zero leakage shut-off throughout the full temperature range of -50 °C to +400 °C.

- Metal-Metal, frictionless non-interference disc operation
- Continuous smooth jam-free operation due to the offset angle of the sealing surface
- Laminated seat/seal system, made of stainless steel/graphite
- Seat/seal system integral to valve body – not on the disc
- The insert ring, mounted against the direction of flow, actively protects the laminated seat/seal system against wear.
- Additionally the laminated seat will not wear prematurely as it is common with laminated disc seal systems.
- The flexible metal laminated seat/seal is securely fastened by the insert ring positioned in front. The floating, self-centred design of the laminated seat/seal system ensures accurate mounting in the valve body.
- When re-seating the disc, the laminated seat/seal system self-centres to the disc.
- The elasticity of the laminated seat/seal system ensures uniform peripheral sealing with the disc.
- Zero leakage acc. to DIN EN 12266-part 1, leakage rate A as well as low torques and continuous smooth operation.



Bearing

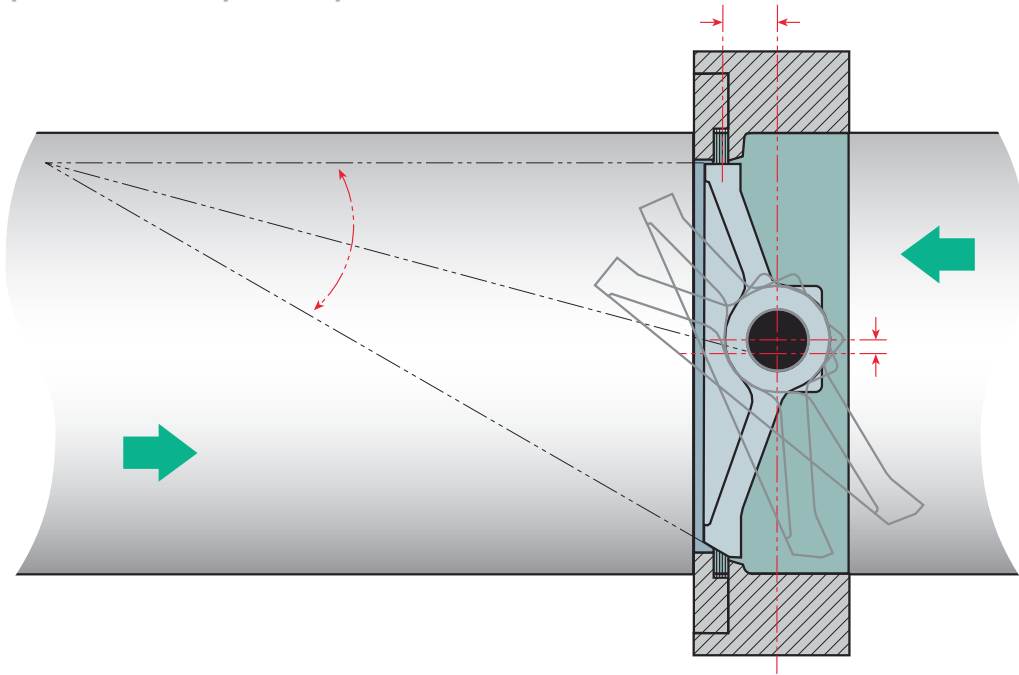
Stem bearings absorb adverse loads and securely support the stem.

Continuous secured stem guidance provides maximum support for the single-piece shaft constructed of high tensile materials

DETAILED SOLUTIONS

High performance butterfly valve | triple offset | type HGT

The triple offset principle



The triple offset butterfly and regulating valves are the advancement of the double offset technology.

In addition to the described double displacements of the sealing surface from the stem pivot, the third eccentricity is achieved by the displacement of the axial symmetry of the sealing surfaces (the seat axis is displaced from the tube axis).

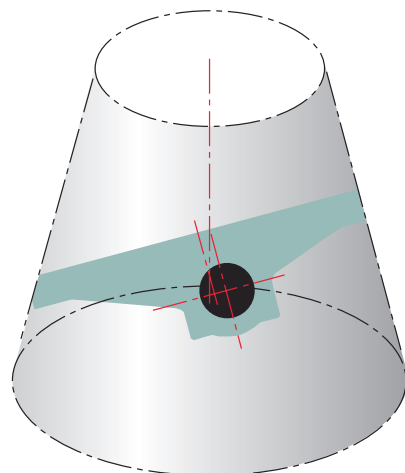
As a cubic body, the cone is the starting point for this function.

The cone is not cut in the straight, centric level, but e.g. (as shown on the schematic drawing), at a right angle to the external bodyline.

The valve disc is not switched to the seat through this gate until the last possible moment. The contact of the two sealing surfaces takes place without friction and without jamming. This design principle ensures a low switching torque with high pressures and temperatures at the same time.

Cone

The cone section is the basis for the function of the third eccentricity.



TECHNICAL DATA

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Pressure and temperature range diagram

Control range

20 ° – 60 ° opening angle

Vacuum-tight

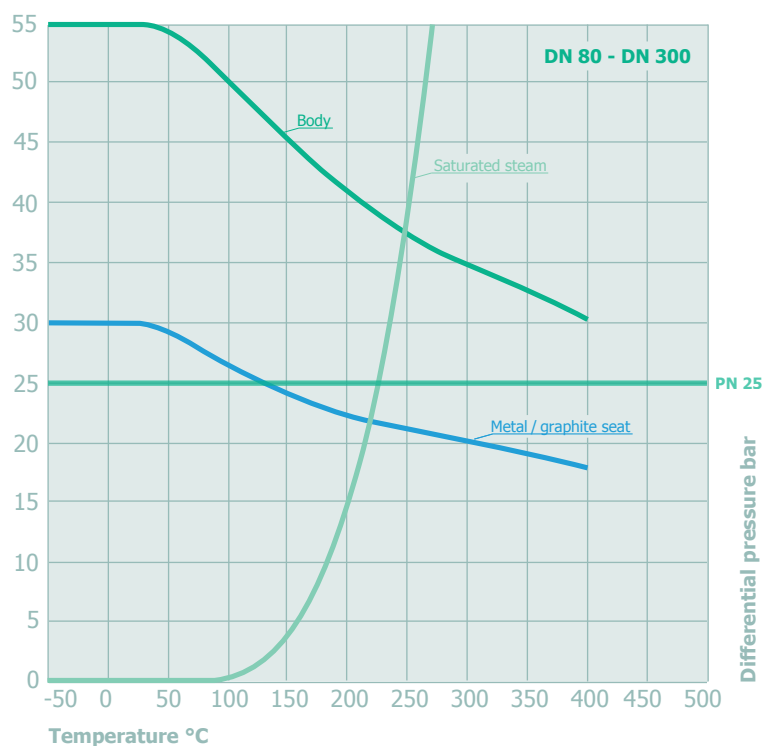
up to 1 mbar (a)

The pressure and temperature range diagram shows the application limits of the metal / graphite seat ring.

These limits apply to the intended use.

Process variables and characteristics of the medium can influence the values of the diagram.

Valve for temperatures below -50 °C:
upon request.



Available materials

Designation	Material	
	HGT 4435 MG	HGT 6635 MG
Body	1.0619	1.4408
Valve disc	1.4408, hardened	1.4408, hardened
Stem	1.4542	1.4542
Seat ring*	Laminated 1.4571/Graphite	Laminated 1.4571/Graphite
Bearing bush	1.4571, nitrated	1.4571, nitrated
Packing ¹⁾	Graphite	Graphite

* Spare part/wear part

¹⁾ Alternative: PTFE/LATTYflon (TA-Luft)/graphite TA-Luft approved

Pressure class/max. working pressure		
Nominal size	Nominal pressure	max. working pressure
DN 80 - DN 300	PN 10/16/25/40 ASME class 150/300	25 bar

The maximum operating pressure depends on the operating temperature.

Flange surfaces

according to DIN EN 1092-1
form B1