

# BALL VALVE

Full/reduced bore | 3-piece | series DG

## Advantages

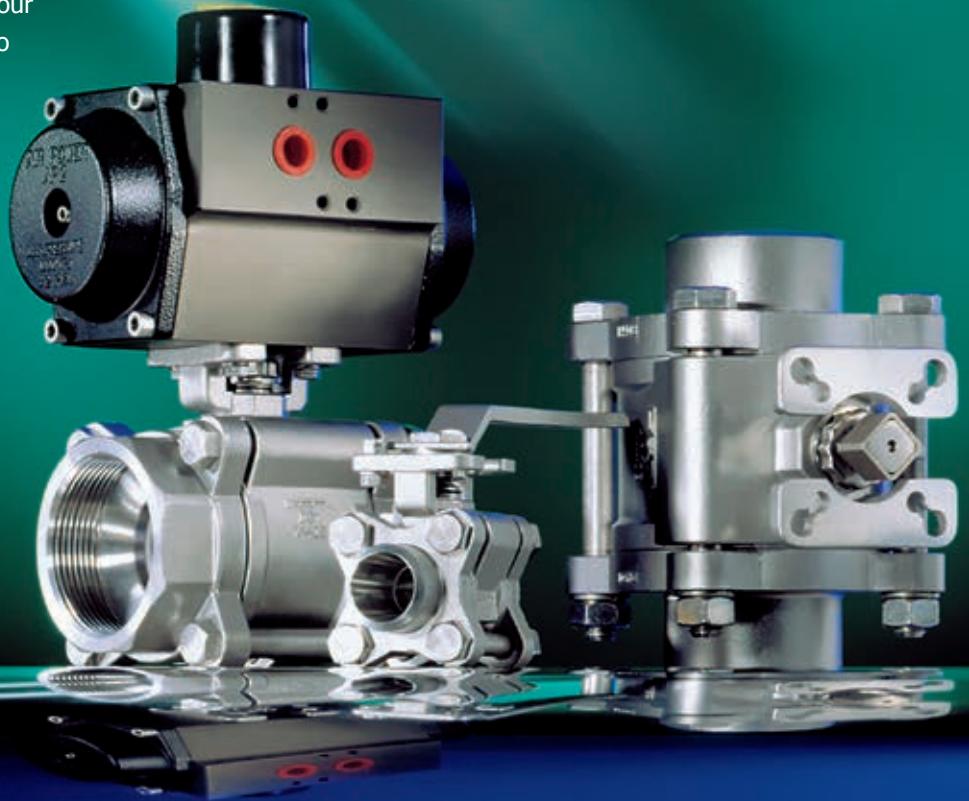
Proven and reliable ball valve even in case of high pressures

Very service-friendly:

Very quick replacement of seals due to the center section, which can be swivelled out

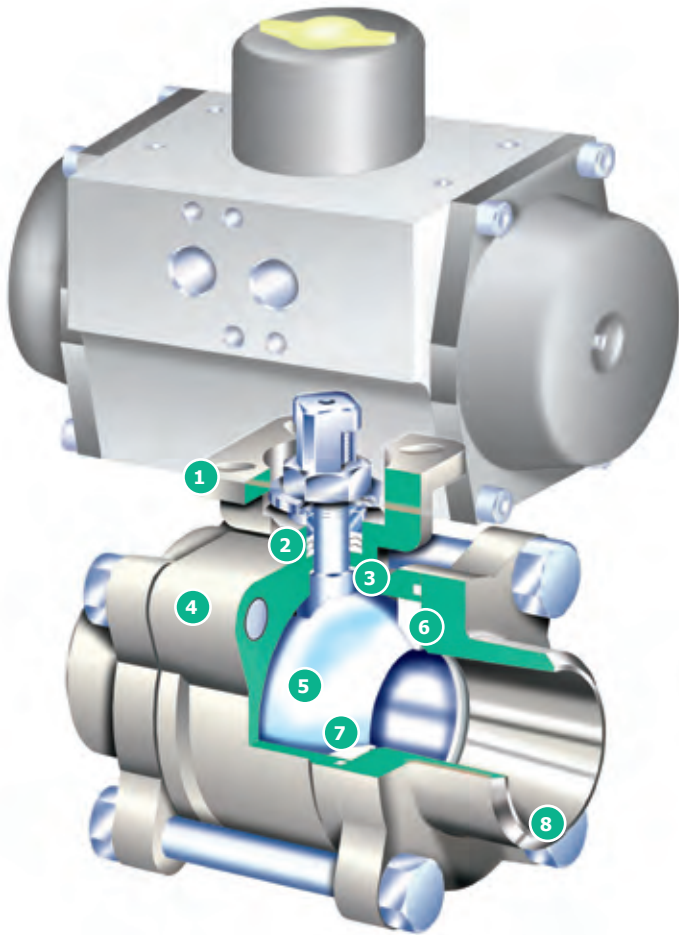
For applications with corrosive media the DG-valves can be supplied in material 1.4529

The ball valves can be adjusted to your applications and requirements due to the wide range of end connectors



# TECHNICAL FEATURES

Ball valve | full/reduced bore | 3-piece | series DG



## 1 Automation

- Standard mounting flange according to EN ISO 5211
- Direct actuator mounting without interruption of the stem
- Pneumatic, electric or manual actuation possible

## 2 Safety

Low-maintenance due to spring-loaded V-rings made of PTFE or graphite packing. Optional: TA-Luft

## 3 Primary sealing

Together with the complex design of the anti-blowout stem, the internal seal ensures a leakage-free application, even in case of a high number of cycles.

## 4 Service-friendly and exact mounting

The center section is guided through the fully centred screw guidance to the correct position at the flanges.

## 5 Shut-off valve

The surface of the ball is high-gloss polished and extremely accurate (roundness)

## 6 Body seal

Secure sealing due to the separate, fully encapsulated body seal.

## 7 Seat ring

Completely leak-tight in the bore due to the special form of the seat rings. The preload of the seat rings causes a spring effect, which results in a reliable sealing in all pressure ranges. Materials: PTFE, PTFE/glass, PTFE/carbon, PEEK, UHMWPE, POM, PVDF.

## 8 Variable end connectors

- Butt weld end, short
- Butt weld end, long
- Orbital weld ends
- Threaded end/female thread/NPT
- Full bore/reduced bore
- Welding flanges

# THE TYPES

Ball valve | full/reduced bore | 3-piece | series DG



## Series DG 1 type 2

Short butt weld ends  
DN8 – DN150

Full and reduced bore

### Technical data

Ball valve for welding, short version, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

### Pipe dimensions

Can be adapted to customer specifications.

### Mounting flange

DIN EN ISO 5211

### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



## Series DG 1 type 3

Threaded ends  
DN8 – DN100

Full and reduced bore

### Technical data

Ball valve with female thread ends according to DIN 2999-Rp (pipe thread), ISO 228/1-G or NPT, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

### Mounting flange

DIN EN ISO 5211

### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



## Series DG 1 type 7

Long butt weld ends  
DN8 – DN50

Full bore

### Technical data

Ball valve for welding, long version, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

### Special features

No disassembly necessary for welding.

### Pipe dimensions

Can be adapted to customer specifications.

### Mounting flange

DIN EN ISO 5211

### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



## Series DG 1 type 1

Welding flanges  
DN8 – DN150

Full and reduced bore

### Technical data

Ball valve for installation between flanges according to DIN EN 1092 or ASME, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

### Face-to-face dimension

EN 5581 line 1 (DIN 3202F1)  
Other face-to-face dimensions are possible.

### Mounting flange

DIN EN ISO 5211

### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



### Series DG 1 type 8

ORBITAL weld ends  
DN8 – DN100

Full bore

#### Technical data

Ball valve for welding in ORBITAL welding process, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

#### Special features

For the application with ultra-clean media.

#### Pipe dimensions

Can be adapted to customer specifications.

#### Mounting flange

DIN EN ISO 5211

#### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



### Series DG 5

Version with almost no cavities  
DN8 – DN100

Full and reduced bore

#### Technical data

Ball valve with seat rings filling the cavities, 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

#### Special features

Can be combined with all kinds of end connectors.

#### Mounting flange

DIN EN ISO 5211

#### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



### Series DG F

Firesafe version  
DN8 – DN100

Full and reduced bore

#### Technical data

Ball valve with Firesafe approval according to BS6755-2, 3-piece body, pressure class depending on the nominal size up to PN 40, floating ball, vacuum-tight.

#### Special features

Can be combined with all kinds of end connectors. Functional safety due to metallic emergency sealing. No disassembly necessary for welding.

#### Mounting flange

DIN EN ISO 5211

#### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A



### Series DG H

Heating jacket  
DN8 – DN150

Full and reduced bore

#### Technical data

Ball valve with heating jacket for all common heating media (pressure  $p_{max} = 20$  bar), 3-piece body, pressure class depending on the nominal size up to PN 125, floating ball, vacuum-tight.

#### Special features

Can be combined with all kinds of end connectors. For constant temperatures in the interior of the valve.

#### Mounting flange

DIN EN ISO 5211

#### Test

DIN EN 12266 P10,P11,P12  
Leakage rate A

# DETAILED SOLUTIONS

Ball valve | full/reduced bore | 3-piece | series DG

## The Firesafe principle

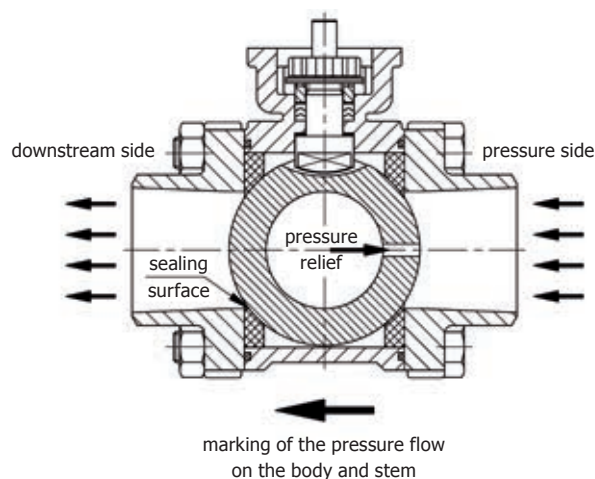


If PTFE sealed valves are exposed to flames in case of fire, this may cause the melting of the sealing materials, which will inevitably result in leakages to the outside and in the bore. In order to be suitable for these requirements, the ball valve DGF is equipped with a special sealing system.

The stem packing as well as the body seal are made of graphite in order to also withstand high temperatures. Due to the groove and tongue system of the end connector and of the body, the encapsulated body seals are safely pressed and the tightness of the valve to the outside remains ensured.

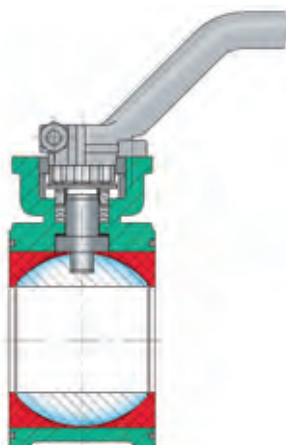
The contour of the end connectors to the ball are designed in a way, that the ball will press against a metallic sealing edge, if the seat ring melts and that an emergency sealing function is achieved in the passage.

## Option: Pressure relief bore



If liquid and thus not compressible media are transported, the pressure in the cavity of the ball valve may increase considerably in case of an increase in temperature. This may be the case, e.g. in case of liquid and thus cold CO<sub>2</sub>. The pressure relief bore ensures that the space between ball and body is connected with a pipeline section and that the pressure in the cavity can never increase above the pipeline pressure. As standard, the pressure relief bore is made from the convex surface of the ball to the ball bore. As an alternative it is also possible to make the pressure relief bore towards the stem. In this case, however, there will only be a pressure relief in the passage position of the ball.

## Option: Passage with few cavities



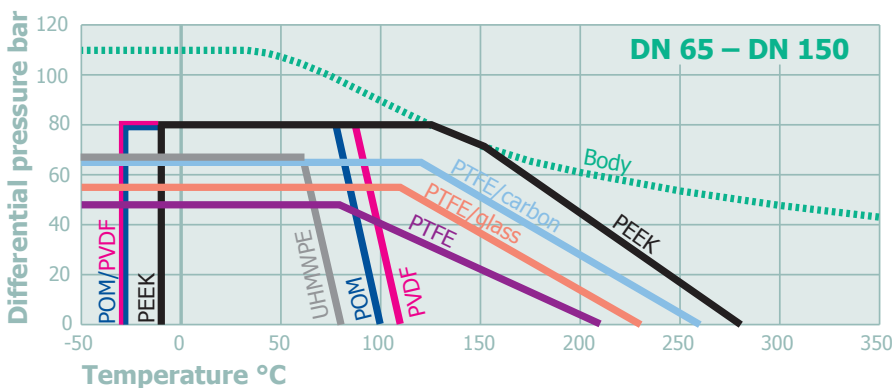
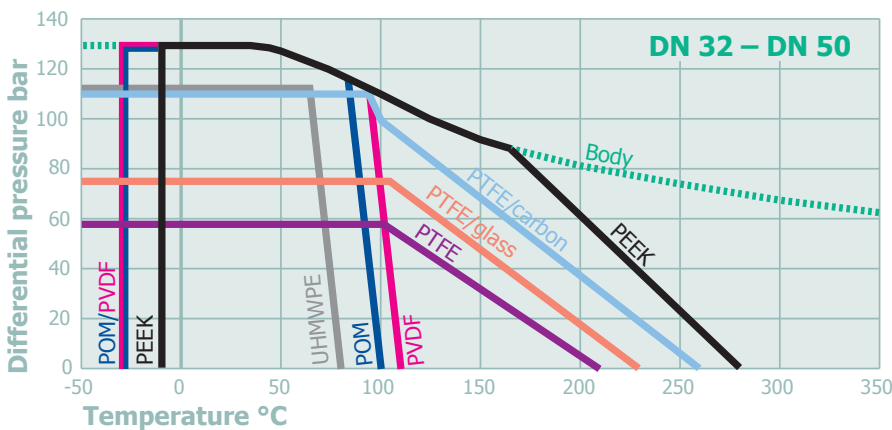
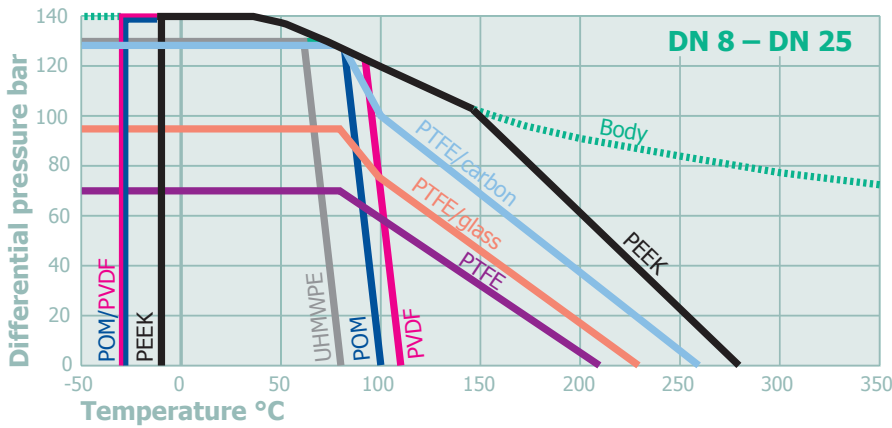
In order to prevent product residues and to prevent the interior from running completely empty, the seat rings filling the cavities enclose the ball and fill the otherwise present cavity.

All common compounds are available as seat ring materials.

# TECHNICAL DATA

Ball valve | full/reduced bore | 3-piece | series DG

## Pressure and temperature range diagram



Designation	Material
Stainless steel body	1.4408
Stainless steel ball	1.4408
Stem	1.4542 (17-4PH)
End connectors	Stainless steel 1.4408 Stainless steel 1.4529 Stahl 1.0619 (GS-C25)
Seat and body rings	PTFE/glass PTFE/carbon PTFE PEEK UHMWPE POM PVDF

All pressure and temperature specifications are maximum application limits, which are influenced by the interaction of all application factors. Therefore, without technical design and without our confirmation, the specifications are without commitment.

# MULTIPLE WAY BALL VALVE

3-piece | series DG

## Advantages

Variable use due to different ball types and connections

Manual or automatic version available

Vertical or horizontal connection possible

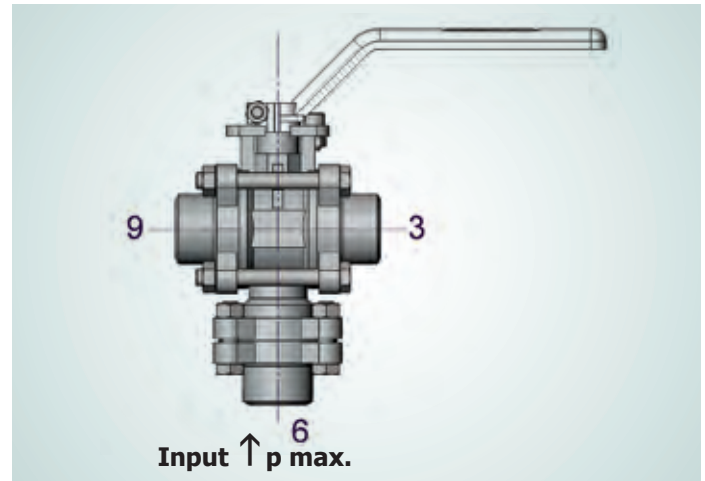
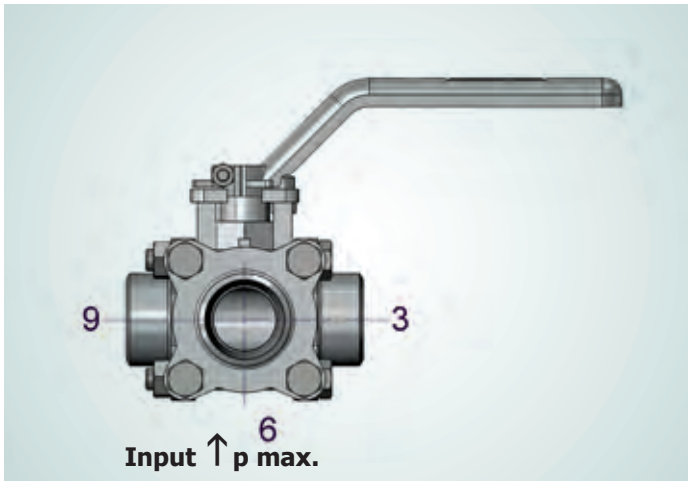
Cost-effective because standard components of the ball valve DG are used

Service-friendly due to 3-piece design



# TECHNICAL FEATURES

Multiple way ball valve | 3-piece | series DG



## Series DG 3

DN8 – DN65

3-way ball valve  
Horizontal design  
Full and reduced bore

### Technical data

Pressure class up to PN40  
Materials and basic version  
correspond to the series DG1

### Special features

Can be combined with all end connectors

### Mounting flange

DIN EN ISO 5211

### Switching function

L-bore, T-bore

## Series DG 4

DN8 – DN65

3-way ball valve  
Vertical design  
Full and reduced bore

### Technical data

Pressure class up to PN40  
Materials and basic version  
correspond to the series DG

### Special features

Can be combined with all end connectors

### Mounting flange

DIN EN ISO 5211

### Switching function

L-bore, T-bore, LL-bore, TL-bore



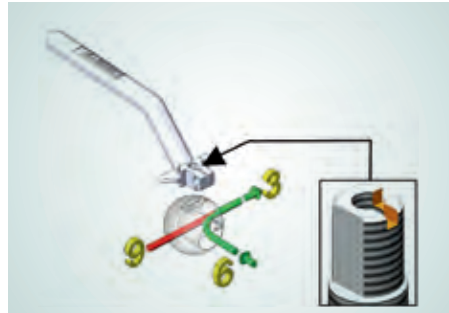
# TECHNICAL FEATURES

Multiple way ball valve | 3-piece | series DG 3

## Switching functions DG 3



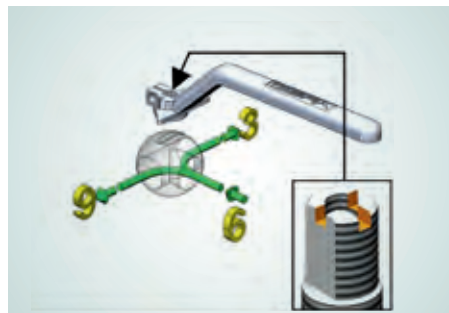
L-bore, 0°, 90° turning



L-bore, 90°, 90° turning



T-Bohrung, 0°, 90° turning



T-Bohrung, 90°, 180° turning



T-Bohrung, 180°, 180° turning

# TECHNICAL FEATURES

Multiple way ball valve | 3-piece | series DG 4

## Switching functions DG 4



L-bore, 0°, 180° turning



L-bore, 90°, 180° turning



L-bore, 180°, 180° turning



T-bore, 0°, 90° turning



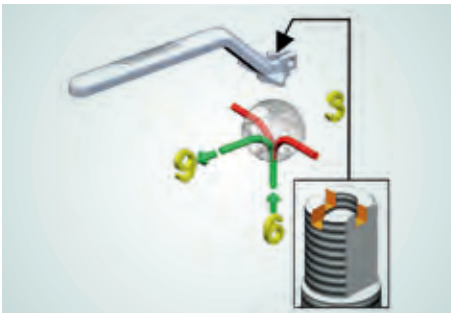
T-bore, 90°, 90° turning



LL-bore, 0°, 90° turning



LL-bore, 90°, 90° turning



TL-bore, 0°, 180° turning



TL-bore, 90°, 180° turning



TL-bore, 90°, 180° turning

# BALL VALVE

3-piece | ORBITAL weld ends | series DG 1 type 8

## Advantages

For applications in supply and process systems with ultra-clean media

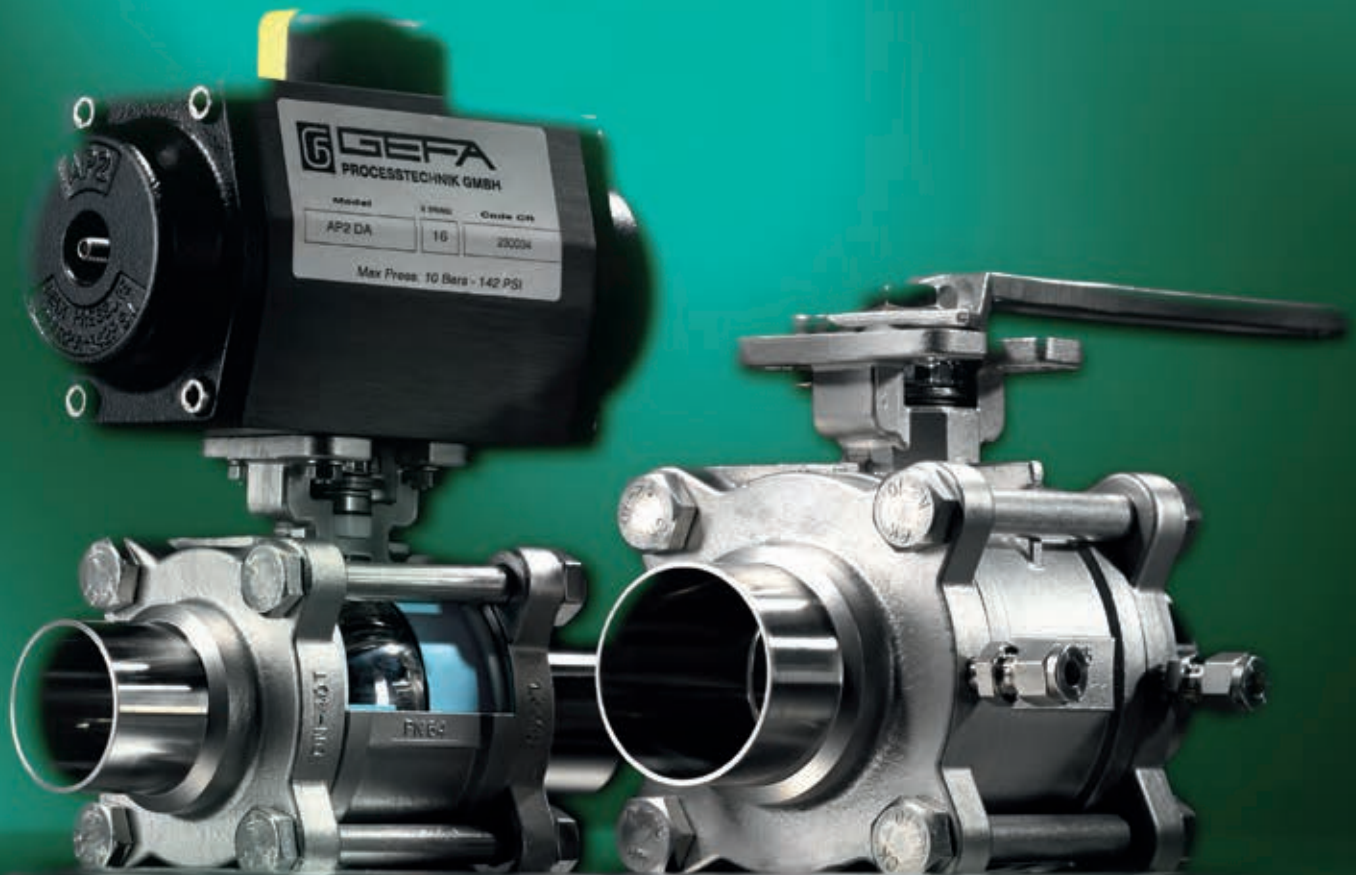
Reliable stem sealing

High switching frequency

For continuously welded pipeline connections and consistent high weld seam qualities

Safe sealing to the outside

High degree of tightness in the passage



# TECHNICAL FEATURES

Ball valve | 3-piece | ORBITAL weld ends | series DG 1 type 8

The ball valve series DG 1 type 8 – with the entire advantages of the basic series – was currently developed further as welding valve with ORBITAL weld ends for the ORBITAL welding technology. With this, we are able to provide a perfect solution for supply and process systems for ultra-clean media to the user and to plant engineering. Optionally, it is possible to polish the entire internal passage of the ball valve to  $Ra \leq 0.8 \mu\text{m}$  in order to meet the high purity requirements of the “high-purity” applications of microelectronics, bioelectronics and pharmacy. The ORBITAL weld ends

are turned cylindrically to the required pipe dimensions both in the inner and in the outer pipe diameter, so that a continuous transition is created between valve and pipeline. The external cylindrical diameter of the weld ends allows to take up the ORBITAL welding device.

Pipe connection dimensions according to the following, among others:  
DIN 11866 – line A (DIN 11850),  
DIN 11866 – line B (EN ISO 1127),  
DIN 11866 – line C (ASME BPE), DIN EN 10220, DIN EN 10305, ASME Schedules

## Available materials

Designation	Material
Body	1.4408
Ball	1.4408
Stem	1.4542 (17-4PH)
Weld ends	1.4409
Seat rings	PTFE PTFE/glass PTFE/carbon UHMWPE PEEK POM PVDF

## Options



**Option**  
Seat rings filling the cavities



**Option**  
Flushing connections on both sides (SWAGELOK screwing)



**Option**  
Ball valve passage electropolished