



Ball valve DG 1

Ball valve, three-piece type DG 1

Optimized and economic solution for automation: the interface according to DIN 3337 – direct mounting of hand levers, gear operators and actuators.

The high-quality ball valves comply with the international industrial safety standards.



Function and design



The GEFA-ball valve series DG 1 is a modern and reliable valve, which can be used for a variety of industrial applications with most different service conditions. ♦ The ball valve is successfully used in the chemical- and petrochemical industry, in process engineering as well as in the food- and beverage sector. For **temperatures ranging from -50 °C to +250 °C** and working pressures up to 125 bar the DG 1 is a safe solution; the limit range of operation, however, always has to be determined in accordance with the actual operating parameters. ♦ Due to the completely free passage a high flow value is reached. In open position the medium flow is not at all blocked, thus the ball valve will not be contaminated by sediments or any accumulation of materia.

For the installation of the ball valve into the pipe additional flanges are not required; all necessary components are already part of the ball valve! The valve is directly welded or screwed to the pipe. By means of body screws the center section is strongly connected with the flanges. The separately encapsulated body seals, separated from the seats, tighten the ball valve to the outside.

In case the ball valve has to be demounted (e.g. change of seats) only three body screws have to be removed. The fourth body screw remains unlocked in the fully centred guidance of the screws. After the ball has been placed in open position, the center section simply has to be turned out around the fourth body screw.

The maintenance of the ball valve is easy and can be executed within some minutes. Due to the spring effect of the seats the ball is pressed against the seats, resulting in a first lip seal. Thus the tightness in normal state (depressurized) is guaranteed and the ball valve has a relative low torque. In case of higher pressures the pressing of the ball against the downstream seat is increased.

The stem sealing is primarily effected by the internal stem ring and is prestressed by the external packing (V-rings), equipped with spring washer.

For a long period of time the stem remains absolutely maintenance-free.

The ball valve is especially prepared for automation. The interface to the actuators is acc. to DIN 3337. Thus the direct mounting of the actuators is possible – an additional adaptation is not necessary.

Safe connection

of all actuators to valve due to direct mounting Interface acc. to DIN 3337 No interruption of valve stem to actuator!

Reliable stem sealing

by V-rings, made of PTFE and equipped with spring washer

bare shaft



hand lever



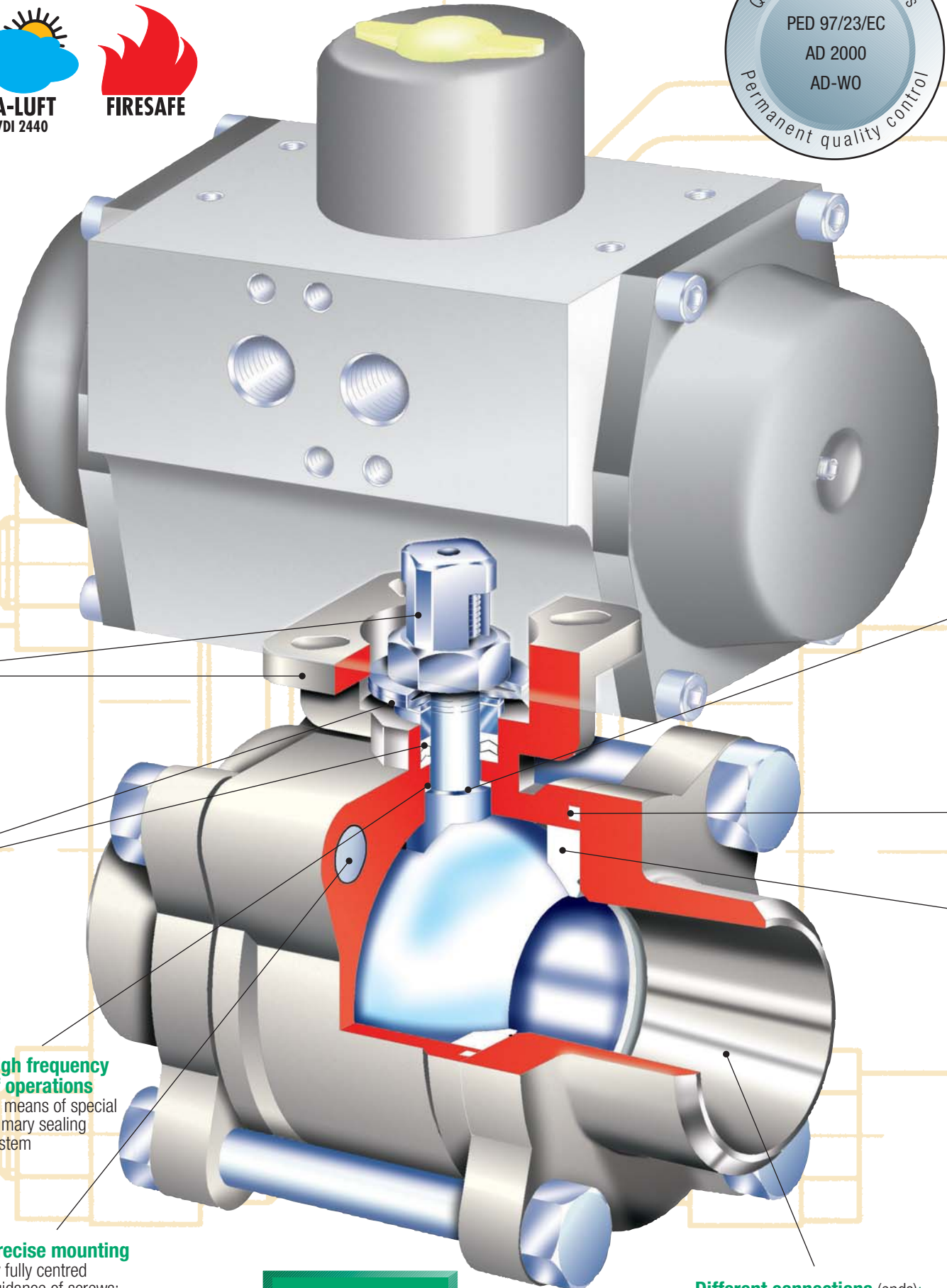
pneumatic actuator



electric actuator



Ball valve DG 1



High frequency of operations

by means of special primary sealing system

Precise mounting

by fully centred guidance of screws; connection of the center section to the flanges in the correct position

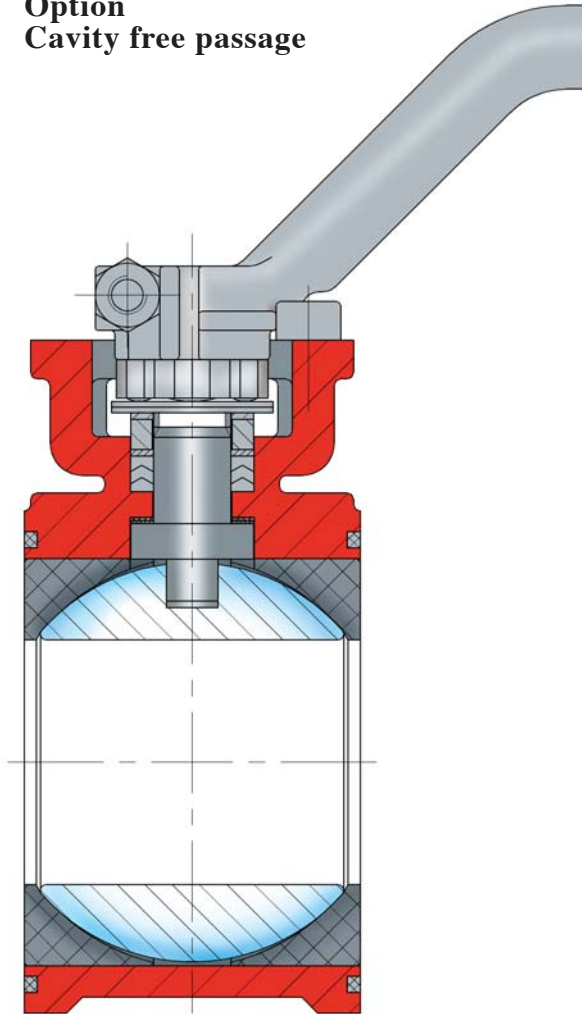
Quality control:
DIN 3230, T 3,
BA, BO 1 / BN 1

Different connections (ends):

- butt weld end, short version
- butt weld end, long version
- screwed end / female thread
- full bore / reduced bore

Technical execution

Option
Cavity free passage



Stem in anti blow-out design; the ball surface is super-polished and absolute round

Safe sealing to the outside, guaranteed by fully encapsulated body seal

High degree of tightness in bore due to the special form of the seats. The prestress of the seats causes a spring effect, which results in a reliable sealing function in all pressure ranges.

Materials:
PTFE/Glass, R-PTFE, Delrin, PEEK, VESPEL

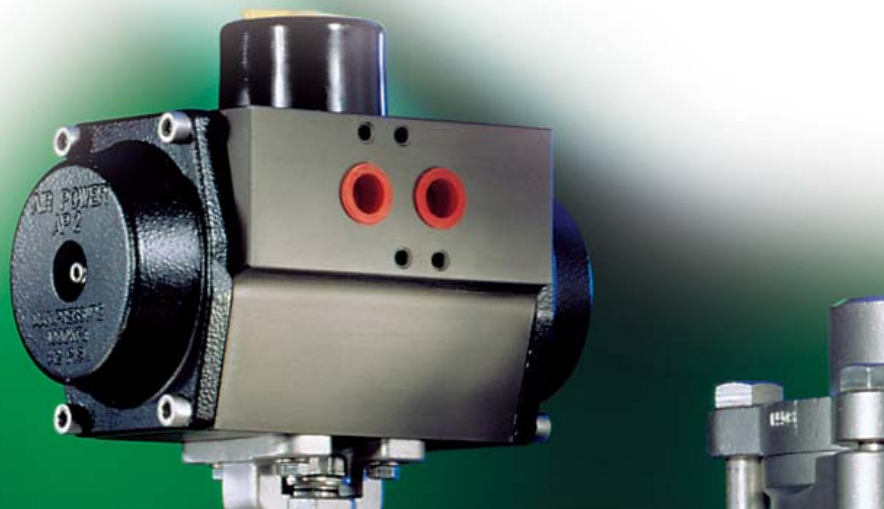
The cavity filled seats cover the ball. Thus product residues behind the ball are avoided.

Systems for automation

① **Limit switch box J 10**
with pneumatic actuator



② **Limit switch box T10**
with pneumatic actuator AP
and solenoid valve



Technical data

Mating dimensions/mounting of actuators full bore

DN	NPS	DIN 3337		square	
		Flange	stem φ S	M1	sw
8	1/4"				
10	3/8"				
15	1/2"	F 03/04	9/11	8	5,5
20	3/4"			8	5,5
25	1"			9	7
32	1 1/4"	F 04/05	11/14	9	7
40	1 1/2"			9	7
50	2"	F 05/07	14/17	11	8
65	2 1/2"	F 07/10	17/22	11	8
80	3"	F 07/10	17/22	14	10
100	4"	F 07/10	17/22		
150*	6"	F 07/10	17/22		

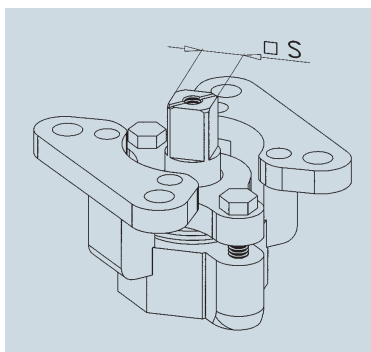
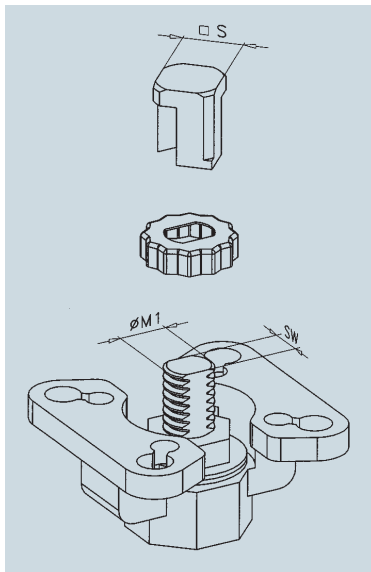
* reduced bore

Dimensioning data

DN	NPS	Breakaway torque in Nm <small>based on medium water at ambient temperature seat material: PTFE/Glass</small>		Flow coefficient Kvs-value	
		red. bore	full bore	red. bore	full bore
8					
10	1/4"				
15	3/8"		5,5		
20	1/2"		5,5		5
25	3/4"	5,5	9		9
32	1"	9	12	9	16
40	1 1/4"	12	14	16	27
50	1 1/2"	14	18	27	45
65	2"	18	20	45	76
80	2 1/2"	20	35	76	110
100	3"	35	75	110	208
150*	4"	75	90	208	360
	6"	90	135	360	550
		135		550	900

* reduced bore

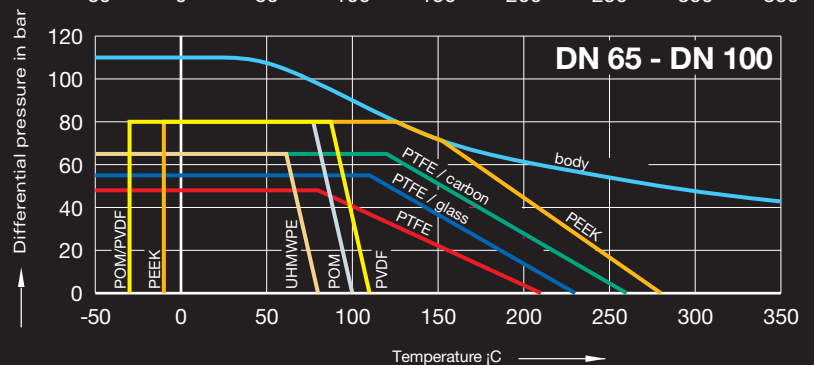
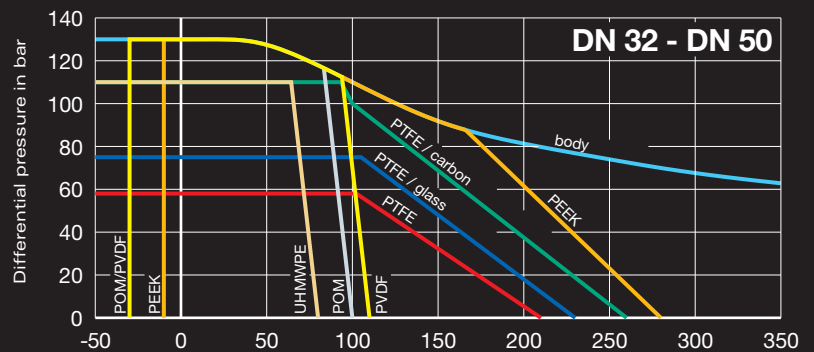
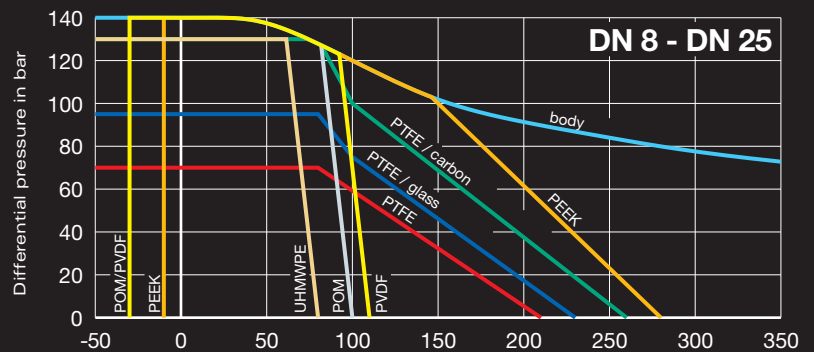
Depending on medium, temperature, pressure and frequency of operations torques may vary.



Seat

- T = PTFE/glass
- TK = PTFE/carbon
- PEEK
- PTFE
- PVDF
- POM
- UHMWPE
- body 1.4408

Pressure-/temperature diagram serie DG 1



Materials available

and example how to order the GEFA-Ball valve DG 1

DG 1 - 66 66 • 2 T - R

Type •

Body 1.4408 •

Ball 1.4571 / 1.4581

Stem 1.4401

Material of ends •

44 = steel GS - C 25

66 = stainless steel 1.4408

Ends •

2 = butt weld ends, short version

3 = screwed ends

4 = socket weld ends

7 = butt weld ends, long version

Seats and body seals •

T = PTFE/Glass

TK = R-PTFE

D = Delrin

P = PEEK

V = VESPEL

Bore •

R = reduced bore

T = full bore



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Germany

Germaniastraße 28
D-44379 Dortmund

P.O. Box 70 01 10
D-44371 Dortmund

Phone 0049-2 31-610 09-0
Fax 0049-2 31-610 09 80

www.gefa.com
gefa@gefa.com