

Stainless Steel Ball Valve Series 26d DIN - Type

Application:

Tight-closing ball valve of stainless steel for aggressive media, especially with high process demand in chemical plants:

- nominal diameters DN 15 to DN 150,
- nominal pressures PN 10, PN 16, PN 25, PN 40,
- temperatures -10°C to 200°C.

The ball valve is also available in 1/2" up to 6" acc. to ANSI 150/300. Details on request.

The control equipment consists of a stainless steel ball valve and a pneumatic quarter-turn actuator, a hand-lever or a gear-operated actuator.

The valves, which are of modular construction have the following features:

- Seating live-loaded at one side or with floating ball.
- "Open-Close" - operation with particularly low leak rate "bubble-tight version".
- Exchangeable bore seal in TFM.
- Stem sealing by means of a cup spring live-loaded V-ring packing.
- Blowout-proof stem.
- Face to face serie 1 acc. to EN 558 (F1 acc. to DIN 3202).
Face to face serie 27 acc. to EN 558 (F4 / F5 acc. to DIN 3202).
- Connecting flange for actuators acc. to DIN ISO 5211.

Versions:

Ball valve Series 26d alternatively in the following designs:

- Ball valve with hand-lever (DN 150 with gear operator).
- Ball valve with gear-operated actuator.
- Ball valve with pneumatic quarter-turn actuator. (for details see respective data sheet).

Special designs:

- Safety stem seal.
- Fire-safe version with test certificate according to British Standard B.S. 6755 Part 2.
- Heating jacket, stainless steel with various connection.
- Flange versions acc. to DIN EN 1092.
- Control ball valve due to characteristic seating



Fig. 1 - Ball valve Series 26d pneumatic quarter-turn actuator Series 31a



Fig. 2 - Ball valve Series 26d with heating jacket

Ball valve Series 26d

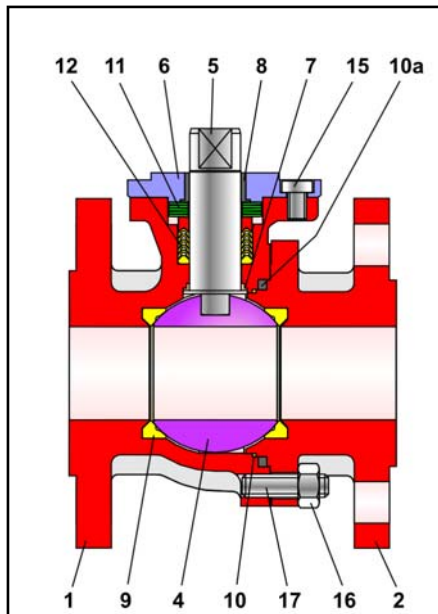


Fig. 3 - Ball valve with floating ball, face to face series 27

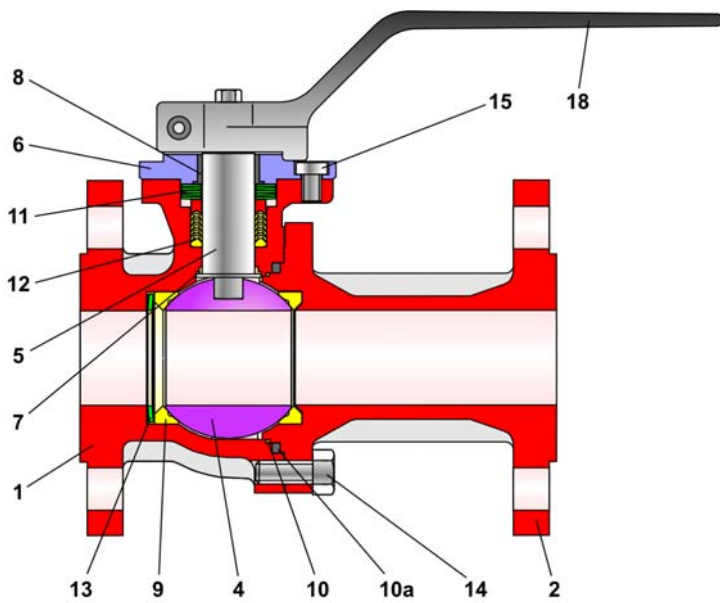


Fig. 4 - Ball valve with live-loaded sealing system, face to face series 1

Pos.	Description	Pos.	Description
1	Main body	10a	Graphite - ring
2	Side body	11	Set of spring washers
4	Ball	12	V-ring packing
5	Control shaft	13	Spring washer
6	Stuffing box flange	14	Screw
7	Bearing bushing	15	Screw
8	Bearing bushing	16	Nut
9	Set of sealing rings	17	Screw
10	PTFE - ring	18	Hand lever

Table 1 - Parts list

Additional equipment and add-on pieces:

For the control valves, the following accessories are available either individually or in combination:

- Extension to stem (100mm, standard).
- Pneumatic and electric quarter-turn actuators.
- Positioner (with optional control ball valve).
- Limit switches.
- Solenoid valves.
- Filter regulator.

Further accessories are available on request for customer specifications.

General technical data:

Nominal diameter	DN 15 to DN 150
Nominal pressure PN	10, 16, 25 or 40 bar
Temperature range	-10°C up to 200°C
Ball sealing	TFM (PTFE)
Leakage rate	Leakage rate A acc. to DIN EN 12266-1, P12 (Leakage rate 1 BO acc. to DIN 3230 Part 3)
Flanges	acc. to DIN EN 1092 (DIN 2633 / 2635)
Stuffing box packing	Live-loadet PTFE - V-ring packing

Table 2 - technical data

Advantages of the cup spring live-loaded sealing system:

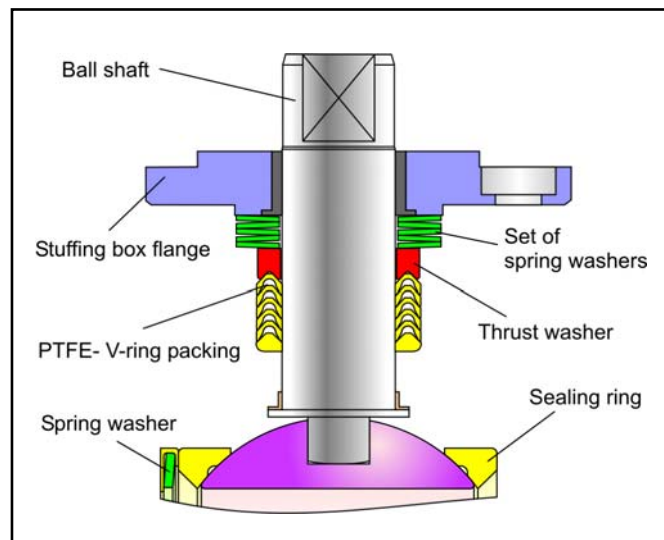


Fig. 5 - Cup spring live-loaded packing

• at flowing Ball and live-loaded sailing system

- maintenance-free and self-adjustable,
- highest level of tightness, even under extreme pressure and temperature fluctuations,
- longer service life,

• at live-loaded sailing system

- two active seatings,
- reduced increase in torque at increasing temperatures, therefore requiring smaller actuators for automation,

• all in all: extremely economic!

Principle of operation:

The ball valves of the series 26d permit full flow through the valve in either direction.

The ball (4) with its cylindrical passage rotates around the middle axis. The opening angle of the ball determines the flow through the free area between the body (1) and passage.

The stem is externally equipped with a hand-lever (18). Optionally, a pneumatic actuator or gear operator can be fitted.

The sealing of the ball (4) is provided by exchangeable seat rings (9).

The ball stem is sealed by a PTFE V-ring-packing (12). The live-loading is carried out by cup springs positioned above the packing.



Note: The ball valve series 26d also can be used for controlling applications. Please pay attention to the technical data sheet <DB 20a-kd>.



Note: Please, pay attention to the usability acc. to the ATEX 94/9/EG in correspondance to the maintenance sheet before using the ball valve in hazardous area!



Failure position: In dependance of mounting position of the actuator there are two failure positions, wich take place by pressure relieving or on failure of air supply:

- **Ball valve with actuator “ on failure closing “**
on failure of air supply the ball valve closes. The opening of the ball valve accures on rising of air supply against the force of the springs.
- **Ball valve with actuator “ on failure opening “**
on failure of air supply the ball valve opens. The closing of the ball valve accures on rising of air supply against the force of the springs.

Materials:

Main body	1.4408
Side body	1.4408 / 1.4571
Ball	1.4408
Control shaft	1.4462
Seat rings	TFM (PTFE)
Spring washer	1.4404 encapsulated in pure PTFE
V-ring packing	PTFE - V-ring-packing with Spring washers in 1.8159
upper Bearing bushing	PTFE with 25% glas
lower Bearing bushing	PTFE with 25% carbon
Body sealing	PTFE / Graphite

Table 3 - Materials

Optional material combinations:

- Stem and ball on request.
- Seatrings in PTFE compounds.
- Metallic seatring

Pressure-Temperature diagram:

The area of application is determined by the pressure-temperature diagram.

Process data and the process medium can affect the values in the diagram.

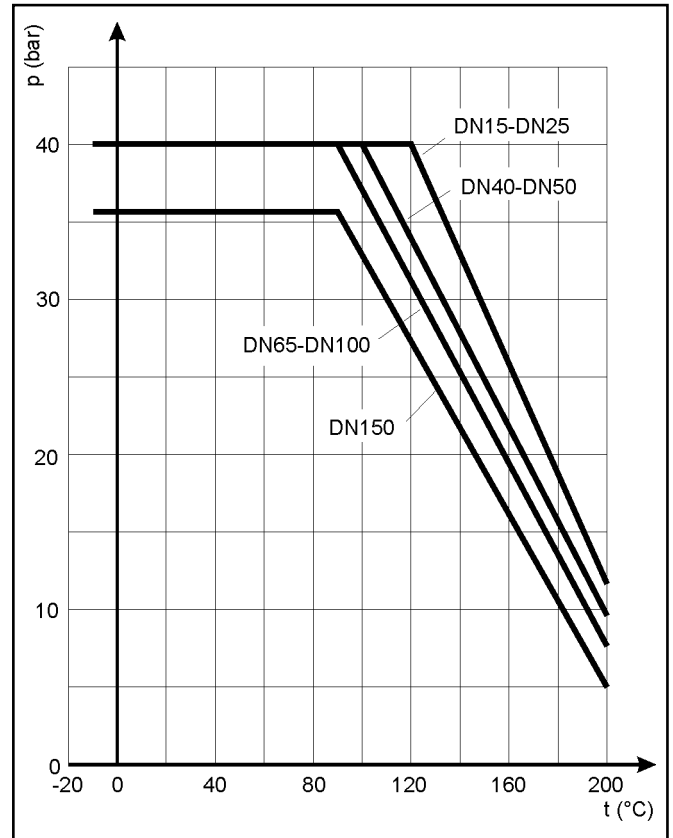


Fig. 6 - Pressure-Temperature diagram

Torque and breakaway torques:

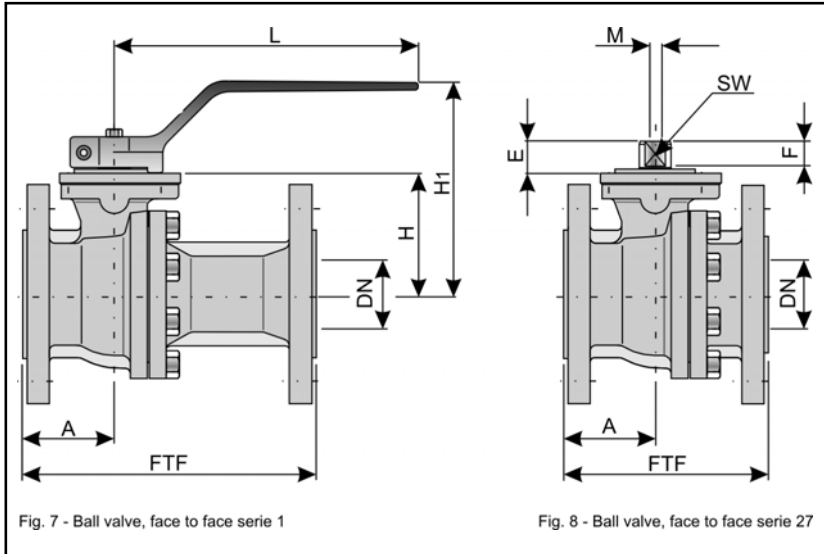
DN	Differential pressure Δp in bar	$M_{dmax.}$ in Nm	M_d in Nm	M_{dI} in Nm					
				0	3	6	10	16	40
15	60	3	5	5	5	8	9	11	
25	240	5	10	10	10	14	18	28	
40	450	10	20	20	20	26	35	52	
50	450	15	30	30	33	36	42	73	
80	750	25	60	60	66	72	86	144	
100	750	40	90	90	105	120	140	251	
150	3160	60	120	120	160	210	290	450	

Table 4 - max. permissible torque, required torque and breakaway torque

The breakaway torques specified are average values which were measured with air at 20°C with the corresponding differential pressures. Operating temperature, process medium and long operating times may affect the permissible torques and breakaway torques considerably.

The listed max. permissible operating torques are valid for the standard materials in table 3.

Dimensions and weights:



Selection and sizing of the ball valve:

1. Calculation of the required nominal diameter.
2. Selection of the valve in accordance with table 2, table 3 and the Pressure-Temperature diagram.
3. Selection of the appropriate actuator with the assistance of table 4.
4. Additional equipment.

Ordering text:

Ball valve in stainless steel Series 26d,
 DN / PN ,
 live-loaded sealing system or
 with floating ball,
 optional special version

Actuator (brand name):

Supply pressure: bar,

fail-safe position:

Limit switch (brand name):

Solenoid valve (brand name):

Positioner:

Others:

DN	15	25	40	50	80	100		150		
PN	40					16	40	16	40	
FTF	Series 1	130	160	200	230	310	350	350	480	480
	Series 27	115	125	140	150	180	190	190	350	350
A	50	56	62.5	65.5	72.5	82.5	81	165	165	
E	13	19	22	22	26	26	26	37	37	
F	9	14	17	17	19	19	19	30	30	
H	46.5	58	83	91	130.5	143.5	155	209	209	
H1	100	110.5	144.5	152.5	181.5	194.5	206	-	-	
L	151	155	207	207	350	350	350	-	-	
M	M5	M6	M6	M6	M8	M8	M8	-	-	
SW	9	14	17	17	19	19	19	30	30	
DIN/ISO Connection	F03	F05	F07	F07	F10	F10	F10	F14	F14	
Weight in kg	Series 1	2.6	5	9	12	28	48	51	110	115
	Series 27	2	4	7.5	10	23	33	35	85	90

Table 5 - Dimensions in mm and weights in kg



Note: All relevant details regarding the version ordered, which deviate from the specified version in this technical description data, can be taken if required, from the corresponding order confirm.

For your special requirements please contact our technical sales department.

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Values subject to change