Pfeiffer
Chemie-Armaturenbau GmbH

Stainless Steel Ball Valve, Compact Desigen Series 26k

Application:

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

- Nominal sizes DN 15 to DN 100.
- Nominal pressure PN 40.
- Temperatures -10°C to 200°C.

The ball valve is also available in 1/2" up to 4" acc. to ANSI 150/300. Details on request.

The control equipment consists of a 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:

- Seat ring 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 packing.
- Fire-safe version with test certificate according to British Standard B.S. 6755 Part 2.
- Blowout-proof stem.
- Attachment options acc. to DIN ISO 5211.

Versions:

Series 26k Ball valve optionally available in the following versions:

- ball valve with hand lever
- ball valve with Manual gear actuator,
- ball valve with pneumatic quarter-turn actuator, (for details see respective data sheet).

Special designs:

- Control ball valve due to characteristic seatring.
- Safety stem seal.
- Heating jacket in steel or stainless steel.
- Flange groove according to DIN EN 1092.

Fig. 1 - Series 26k Ball Valve with Series 31a pneumatic Quarter-Turn Actuator

Fig. 2 - Series 26k Ball Valve with hand lever

Ball Valve in Compact desigen Series 26k

Additional equipment and add-on pieces:

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

- Extension to stem (100mm).
- 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

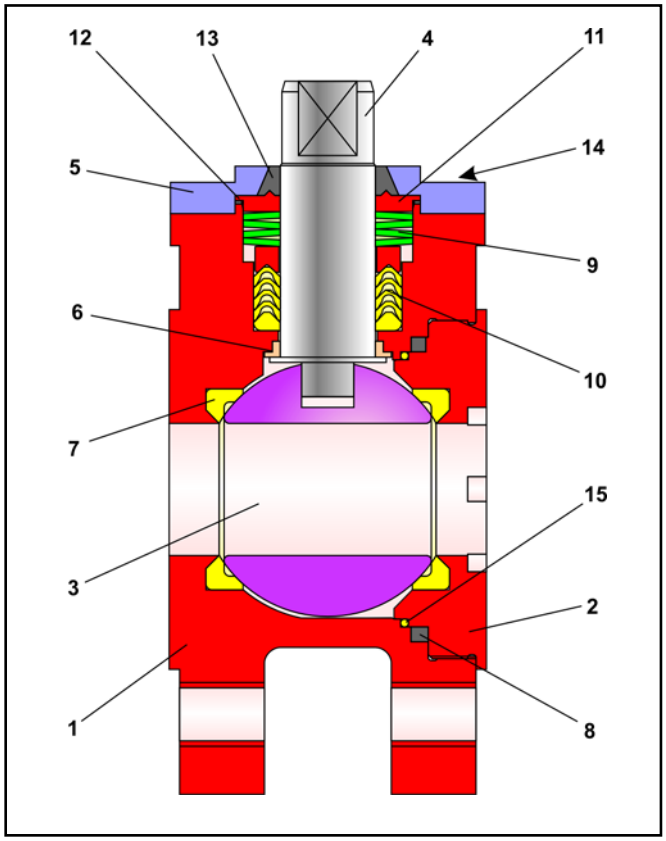

Fig. 3 – Sectional diagram of Series 26k Ball Valve

Item	Description	Item	Description
1	Main body	9	Set of spring washers
2	Side body	10	V-ring packing
3	Ball	11	Bushing
4	Control shaft	12	Carbon ring
5	Stuffing box flange	13	Carbon ring
6	Bearing bushing	14	Screw
7	Set of sealing rings	15	Body sealing
8	Carbon ring		

Table 1 - Parts list

Advantages of the cup spring live-loaded sealing system:

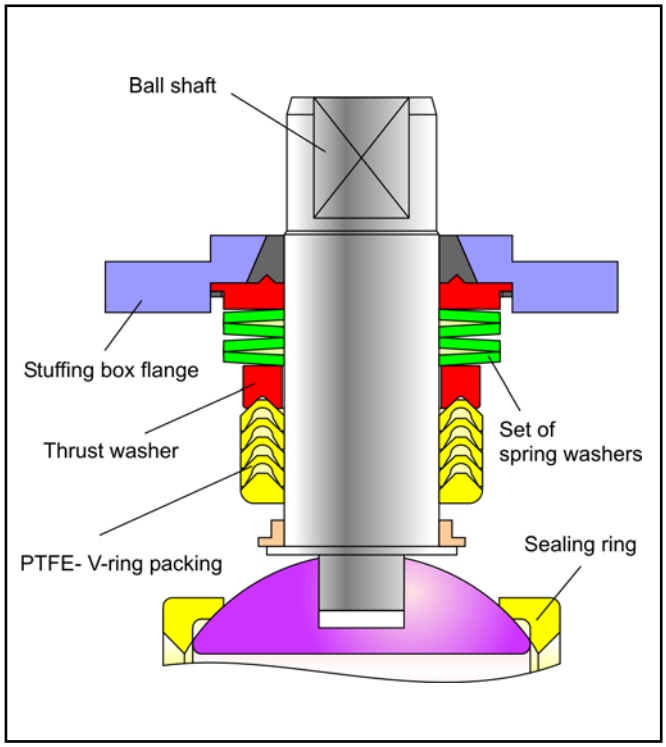

Fig. 4 – Cup spring live-loaded packing

- maintenance-free and self-adjustable,
- highest level of tightness, even under extreme pressure and temperature fluctuations,
- longer service life,
- ***all in all: extremely economic!***

Principle of operation:

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

The ball (3) 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. Optionally, a pneumatic actuator or gear operator can be fitted.

The sealing of the ball (3) is provided by exchangeable seat rings (7).
The ball stem is sealed by a PTFE V-ring-packing (10). The live-loading is carried out by cup springs (9) positioned above the packing.

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

Note: Please, pay attention to the usebility 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.

General technical data:

Nominal size	DN 15 to DN 100
Nominal pressure	40 bar
Temperature range	-10°C 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)
Stuffing box packing	live-loadet PTFE - V-ring packing

Table 2 - technical data

Materials:

Body and screwed flange	1.4408
Ball	1.4408
Control shaft	1.4462
Seat rings	TFM (PTFE)
V-ring packing	PTFE - V-ring-packing loaded by Belleville washers (1.8159)
lower Bearing bushing	PTFE with 25% glass
upper Bearing bushing	Carbon graphite
insde Body sealing	PTFE
outside Body sealing	Carbon graphite

Table 3 - Materials

Optional material combinations:

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

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.

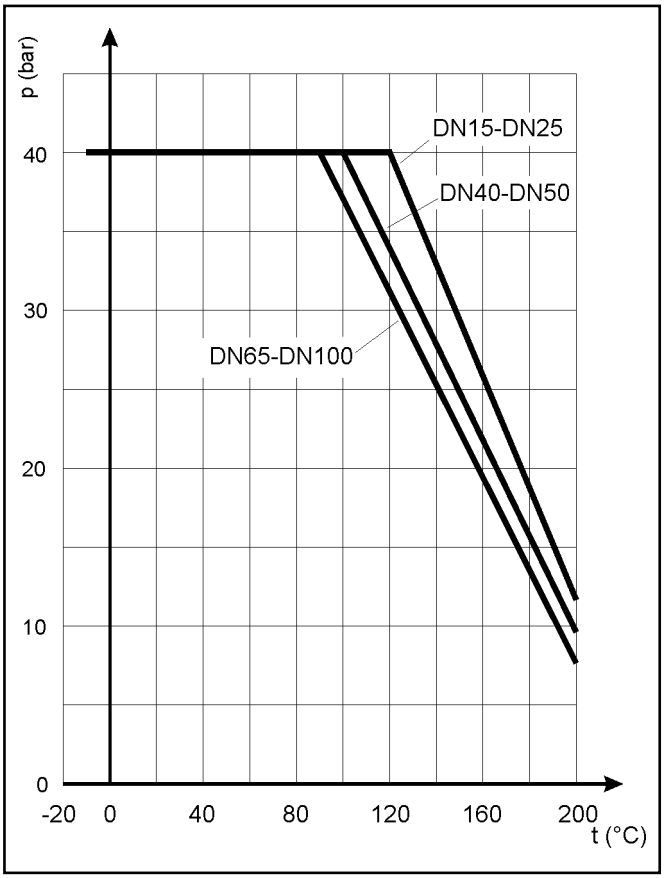

Fig. 5 - Pressure-Temperature diagram

Torque and breakaway torques:

Differencial pressure Δp in bar			0	3	6	10	16	40
DN	Mdmax. in Nm	Md in Nm	Mdl in Nm					
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

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.

Dimensions:

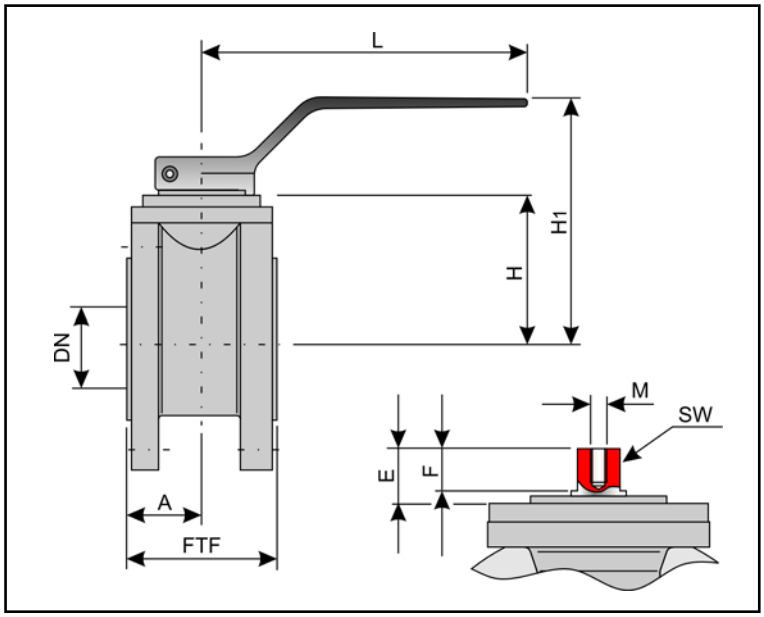

Fig. 6 - Dimensional drawing

DN	15	25	40	50	80	100
PN	40					
FTF	50	60	80	95	145	170
A	25	30	40	47,5	72,5	85
H	46.5	58	77	91	113.5	128
H_1	80	105	148	155	184	205
E	13	19	22	22	26	26
F	50.5	63	82	96	120.5	135
M	M5	M6	M6	M6	M8	M8
L	151	155	207	207	350	350
SW	9	14	17	17	19	19
DIN/ISO Connection	F03	F05	F07	F07	F10	F10

Table 5 - Dimensions in mm and weights in kg

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 26a,
DN . . . . / PN . . . . ,
optional special version

Manual gear actuator
or actuator (brand name): . . . .
Supply pressure: . . . . bar
fail-safe position: . . . .

Limit switch (brand name): . . . .
Solenoid valve (brand name): . . . .
Positioner: . . . .

Others: . . . .

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

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