Pfeiffer
Chemie-Armaturenbau GmbH

Stainless steel
Ball Valve Series 26e
with trunnion-mounted ball

Application:

Tight-closing ball valve made of corrosion-resistant materials for corrosive process media. Especially suitable for high requirements in chemical plants:

- Nominal sizes DN 50 to DN 200,
- Nominal pressure PN 10 to PN 160,
- Temperatures –10 °C to 200 °C.

The control valve consists of a ball valve made of corrosion-resistant material and either a pneumatic rotary actuator, a manual gear or a lever. The valve is designed acc. to the modular-assembly principle and has the following special features:

- Body, ball and stem made of high-alloyed steel, nickel, titanium or other corrosion-resistant material
- Sealing rings live-loaded on both sides
- Exchangeable bore seal in TFM
  Stem sealing by means of live-loaded V-ring packing
- On/off service with particularly low leakage rate, bubble-tight version
- Blowout-proof stem
- Mounting flange for actuators acc. to DIN ISO 5211
- Face-to-face dimensions DIN EN 558, Series 1 (DIN 3202, F1)

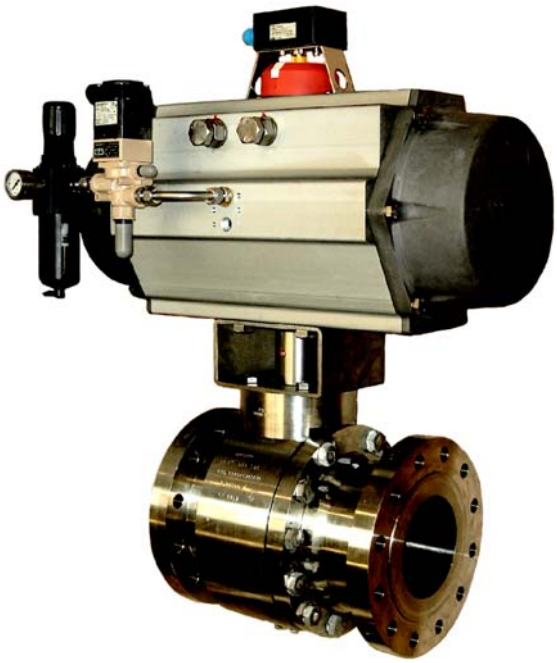

Fig. 1 – Ball Valve BR 26e with AT-actuator Series 31a

Versions:

The Series 26e Ball valve is available in the following versions:

- Ball valve with lever
- Ball valve with manual gear
- Ball valve with pneumatic rotary actuator

(see respective Data Sheet for details)

Special versions:

- Body or components made of special materials (Monel, Hastelloy, etc.)
- Seat rings not live-loaded
- Double packing with test connection
- Fire-safe design
- Heating jacket made of steel or high-alloyed steel with various adaptations
- Grooved flange acc. to DIN EN 1092
- Ball valve for throttling service over a seat ring with flow characteristic
- Metal sealing in bore passage
- High-temperature version
- High-pressure version up to PN 160
- Other face-to-face dimensions and nominal sizes (also ANSI sizes) are available on request.

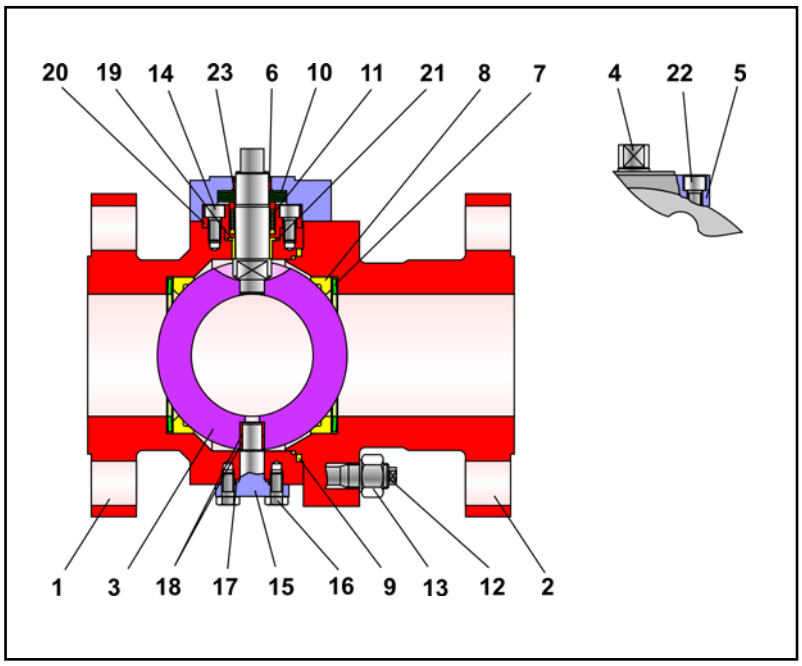

Fig. 2 - Ball valve Series 26e

Item	Description	Item	Description
1	Main body	13	Nut
2	Body cap	14	Screw
3	Ball	15	Trunnion
4	Control shaft	16	Screw
5	Stuffing box flange	17	TFM ring
6	Bearing bushing	18	Bearing bushing
7	Spring washer	19	Bearing bushing
8	Set of seat rings	20	Bushing
9	Body sealing	21	TFM ring
10	Set of spring washers	22	Screw
11	V-ring packing	23	Bearing bushing
12	Stud bolt		

Table 1 – List of parts

Additional equipment and mounting parts:

The following accessories are available for the valve separately or in combinations:

- Stem extension (100 mm)
- Pneumatic and electric rotary actuators
- Exchangeable pneumatic actuator which can be equipped with limit switches and solenoid valves
- Positioner (for option ball valve for throttling services)
- Limit switches
- Solenoid valves
- Supply air pressure regulator/filter

other accessories possible on request.

Principle of operation:

The process medium can flow through the Series 26e Ball Valve in both directions when the valve is completely open.

The ball (3) with its cylindrical passage rotates around the middle axis. Over the trunnion (15) which is located underneath the ball, the ball is double-guided. The rotary angle of the ball determines the flow rate over the free area between the body (1) and the ball channel. When the valve is fully open, the entire cross-section is released.

The top end of the stem is fitted with a lever. It can optionally fitted with a pneumatic rotary actuator or manual gear.

The ball (3) is sealed with exchangeable seat rings (8). The stem is sealed by a PTFE V-ring packing (11) which is loaded over Belleville spring washers (10) located on top of the packing.

Note: The ball valve can also be used for throttling service. Please refer to the Data Sheet <DB20a-kd> for further instructions in this case.

Note: Before using the ball valve in hazardous areas, check whether this is possible acc. to ATEX 94/9/EC.
See Operating Instructions <BA 26s>.

Fail-safe position: Depending on how the pneumatic actuator is mounted to the valve, the ball valve has two fail-safe positions which become effective when the air pressure in the actuator is relieved or when the supply air fails:

- **Ball valve with actuator “Spring closes”:**
  Upon air failure, the ball valve is closed. The valve opens when the signal pressure increases, acting against the force of the springs.
- **Ball valve with actuator “Spring opens”:**
  Upon air failure, the ball valve is opened. The valve closes when the signal pressure increases, acting against the force of the springs.

General technical data:

Nominal size	DN 50 to DN 200
Nominal pressure	PN10, 16, 25, 40, 63, 100 and 160 bar
Temperature range	-10°C to 200°C
Ball sealing	TFM (PTFE) or compound-filled
Leakage rate	Leakage rate A acc. to DIN EN 12266-1, test P12 (Leakage rate 1 BO acc to DIN 3230 Part 3)
Flanges	acc. to DIN or ANSI Class 150 and 300
Packing	PTFE V-ring packing loadet by Belleville spring washers
Face-to face	DIN EN 558, Series 1 or ASME B 16.10

Table 2 – Technical data

Materials:

Main body	1.4408 / 1.4571
Body cap	1.4408 / 1.4571
Ball	1.4408 / 1.4571
Control shaft	1.4462
Seat rings	TFM (PTFE)
Spring washer	1.4404 coated with white PTFE
Packing	PTFE - V-ring-packing, loaded by Belleville spring washers made of 1.8159
Bottom bearing bushing	PTFE with 25% glass
Top bearing bushing	PTFE with 25% carbon
Body sealing	White PTFE

Table 3 – Materials acc. to DIN

Optional material combinations:

- Stem and ball in special materials
- Seat rings in PTFE compounds, special plastics
- Metal sealing system
- Graphite body gasket

Benefits of sealing systems loaded by spring washers:

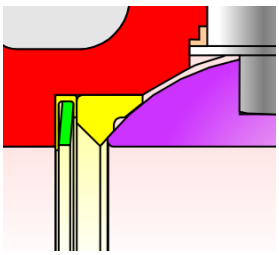

Fig. 3 – Sealing ring loaded by spring washers

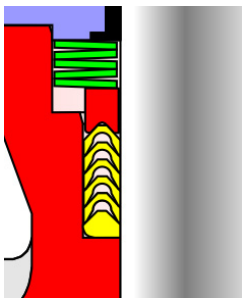

Fig. 4 – V-ring packing loaded by Belleville spring washers

- Maintenance-free and self-adjusting
- Two active seat rings
- Highest level of sealing effectiveness, even when pressure and temperature deviate extremely
- Longer service life
- Low torque increase with increasing temperature. Due to this, smaller actuators are required for automation
- Lower torque at higher differential pressures
- **All in all: extremely economical!**

Pressure-Temperature diagram:

The range of application is determined by the pressure-temperature diagram.
Process data and medium can affect the values in the diagram.

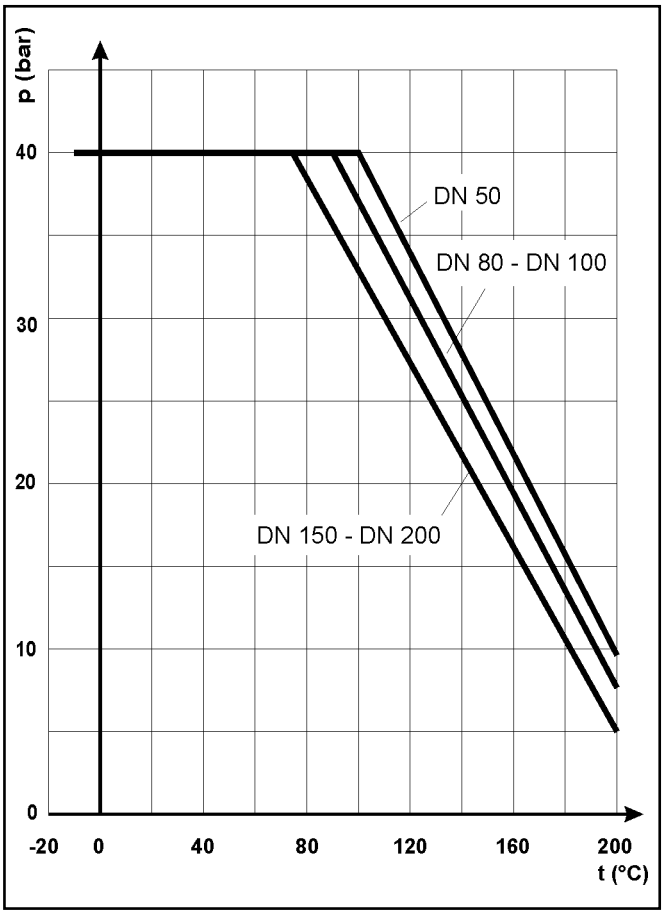

Fig. 5 – Pressure-Temperature diagram

Torques and breakaway torques:

Differencial pressure Δp in bar		0	10	16	25	40	63	100	160
DN	Mdmax. in Nm	Mdl in Nm							
50	451	45	50	55	60	65	75	90	170
80	688	80	90	100	110	125	140	160	380
100	688	140	150	160	180	200	250	320	650
150	3159	330	340	350	360	380	420	620	1180
200	3678	460	680	820	1050	1280	-	-	-

Table 4 – Maximum permissible torque, required torques and breakaway torques

The specified breakaway torques are mean values which have been measured at the corresponding differential pressures with air at 20 °C. Operating temperature, process medium as well as longer times of use may change the breakaway torque and torque.

Dimensions and weights:

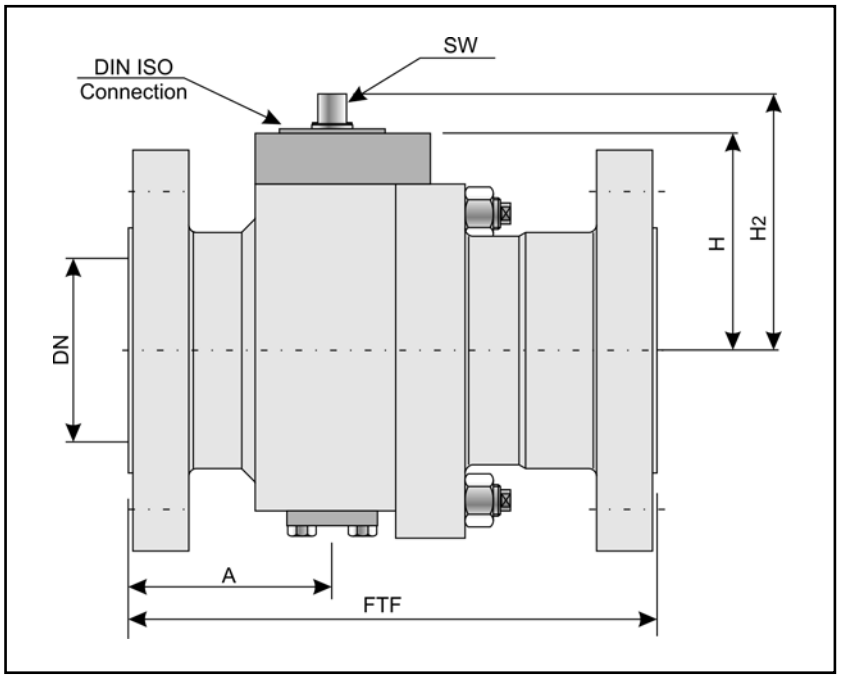

Fig. 6 – Dimensional drawing

DN	50	80	100	150	200	150
PN	PN 10 - PN 160 as well as Class 150 - 900			PN 10 - PN 40 as well as Class 150 - 300		PN 63 - PN 160 Class 600 -900
FTF	230	310	350	480	600	480
A	97	126	135	165	190	189
H	105	130	144	212	251	249
H2	127	154	170	246	289	286
SW	17	19	19	30	30	30
DIN/ISO Connection	F07	F10	F10	F14	F14	F16

Table 5 – Dimensions in mm and weights in kg

Selection and sizing of the ball valve:

1. Determine the required nominal size
2. Select the valve over Table 2, Table 2 and the Pressure-Temperature diagram
3. Select the actuator over Table 4
4. Select additional equipment/ accessories.

Ordering text:

Stainless steel ball valve Series 26e,
DN /PN , on option, special version
Actuator (brand name):
Signal pressure bar,
Fail-safe position:

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

Pfeiffer Chemie-Armaturenbau GmbH
Hooghe Weg 41 • 47906 Kempen
Telefon: +49 21 52 20 05 - 0 • Telefax: +49 21 52 15 80
E-Mail: vertrieb@pfeiffer-armaturen.com • Internet: www.pfeiffer-armaturen.com

Values subject to change

600904 / PDF=489