

# Stainless steel Trunnion Ball valve Series 26s

## Application:

Tight-closing ball valve produced from anti-corrosive material for heavy duty service, especially for high process demand in chemical plants:

- nominal diameters DN 150 to DN 500
- nominal pressure ratings PN 10, PN 16, PN 25, PN 40
- temperatures -10°C to 200°C

The control unit consists of a ball valve and a pneumatic quarter-turn actuator or a gear operator. The valves, which are of modular construction have the following features:

- seatings live-loaded
- "open -close" -operation with particularly low leak rate
- valve body, ball and shaft made of stainless steel  
other anti-corrosive materials on request
- exchangeable bore seal in TFM
- stem sealing by means of a cup spring live-loaded packing
- blowout-proof stem
- face to face serie acc. to DIN EN 558, serie 27 and 15
- connecting flange for actuators acc. to DIN ISO 5211

## Versions:

Ball valve Series 26s alternatively in the following designs:

- ball valve with gear operator
- ball valve with pneumatic quarter-turn actuator  
available with or without spring mechanism  
(for details see respective data sheet)

## Special designs:

- body and further components in special material
- metallic seating
- double stuffing box with leakage detecting connection
- fire-safe design
- heating jacket, steel or stainless steel with  
various connection
- flange groove acc. to DIN EN 1092
- high temperature version
- low temperature version (-196°C)
- high pressure version
- other face-to-face dimensions and nominal sizes ( also  
in ANSI 150 and 300 lbs ) on request



Fig. 1 - Ball valve series 26s with AT-Actuator series 31a, Type SRP 5000

Fig. 2 - Ball valve series 26s with Bettis-Actuator

# Ball valve Series 26s

## Additional equipment and add-on pieces:

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

- extension to stem (length on request)
- pneumatic and electric quarter-turn actuators
- limit switches
- solenoid valves
- filter regulator

further accessories are available on request for customer specifications

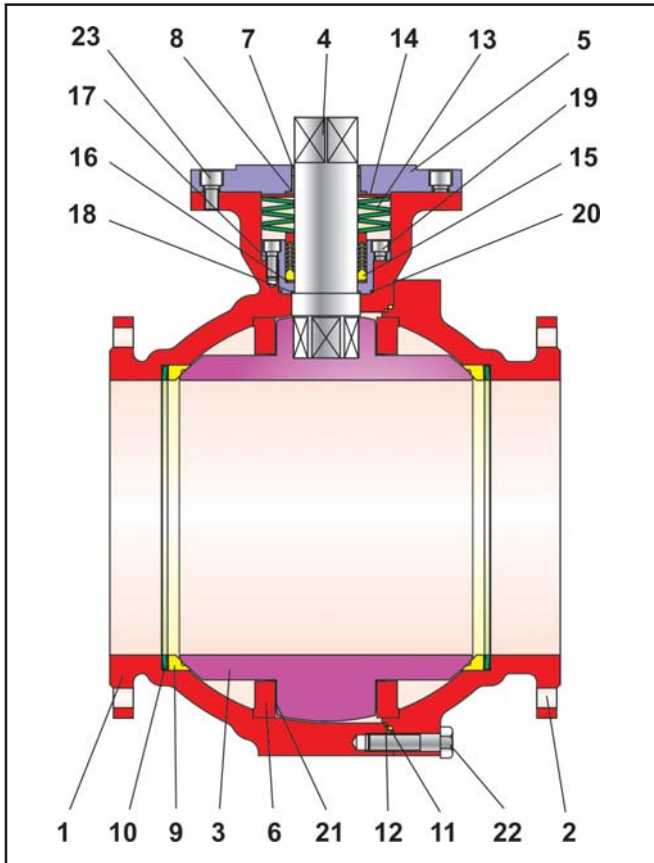
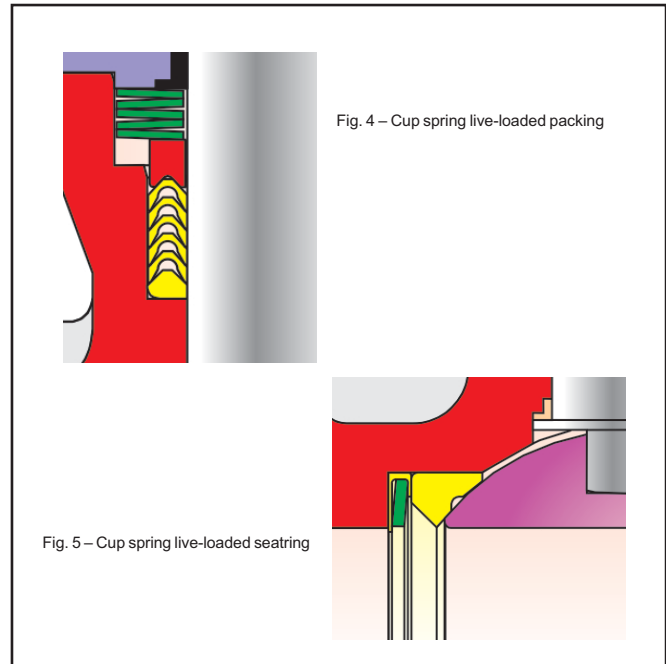


Fig. 3 - Ball valve Series 26s

Item	Description	Item	Description
1	Main body	13	Set of spring washers
2	Side body	14	Thrust washer
3	Ball	15	V-ring packing
4	Control shaft	16	Thrust washer
5	Stuffing box flange	17	Bushing
6	Bearing	18	Ring
7	Bearing bushing	19	Screw
8	Bearing bushing	20	PTFE-ring
9	Sealing ring	21	Bearing bushing
10	Spring washer	22	Screw
11	PTFE-ring	23	Screw
12	PTFE-ring		

Table 1 - Parts list

## Advantages of the cup spring live-loaded sealing system:



- maintenance-free and self-adjustable
- two active seatings
- highest level of tightness, even under extreme pressure and temperature fluctuations
- longer service life
- 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 26s permit full media flow through the valve in either direction.

The ball ( 3 ) with its cylindrical passage rotates around the middle axis ( 4 ).

The opening angle of the ball determines the flow through the free area between the body ( 1 ) and passage.

The valve can be equipped with an actuation. Optionally, a pneumatic actuator or gear operator can be fitted.

The sealing of the ball ( 3 ) is provided by exchangeable seat rings ( 9 ).

The ball stem is sealed by a PTFE V-ring-packing ( 15 ). The live-loading is carried out by cup springs ( 13 ) positioned above the packing.



**Note:** The ball valve series 26s 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.

### General technical data:

Nominal diameter	DN 150 to DN 500
Nominal pressure	PN 10, 16, 25 or 40
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)
Connections	all DIN-versions, ANSI Class 150 and 300 on request
Stuffing box packing	live-loadet PTFE - V-ring packing

Table 2 - technical data

### Materials:

Main body	1.4408
Side body	1.4408
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 of 1.8159, Delta Tone
upper Bearing bushing	PTFE with 25% glas
lower Bearing bushing	PTFE with 25% carbon
Body sealing	PTFE

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.

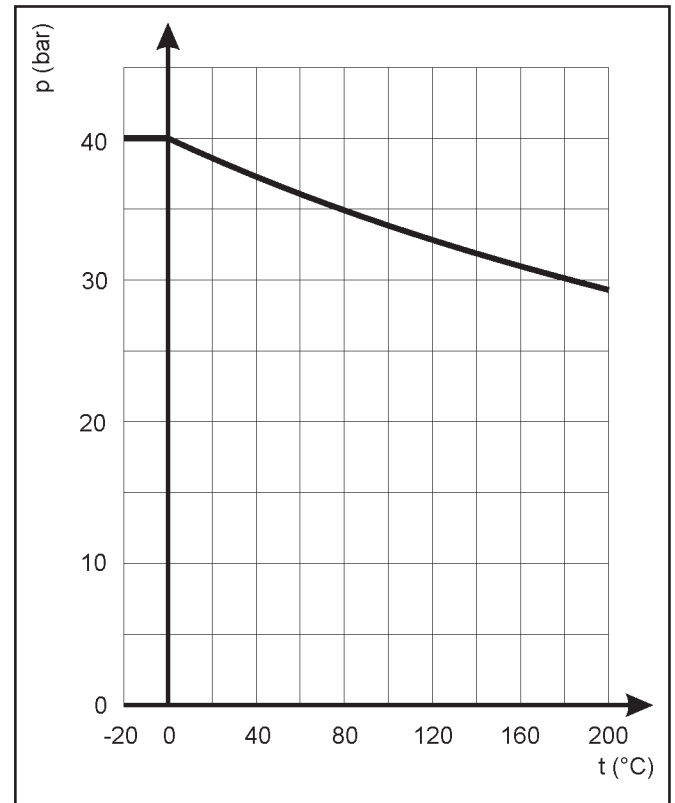


Fig. 6 - Pressure-Temperature diagram

### Torque and breakaway torques:

Differential pressure $\Delta p$ in bar		0	10	16	25	40
DN	Md <sub>max.</sub> in Nm	Mdl in Nm				
150	3159	230	398	498	650	1150
200	5073	400	692	866	1350	1950
250	5073	450	800	980	1420	2020
300	15629	490	900	1100	1500	2100
400	33140	700	1100	1300	1700	2300
500	58335	1200	1500	1700	2100	2800

Table 4 - max. permissible torque and breakaway torque

The breakaway torques mentioned in the table above 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 and weights:

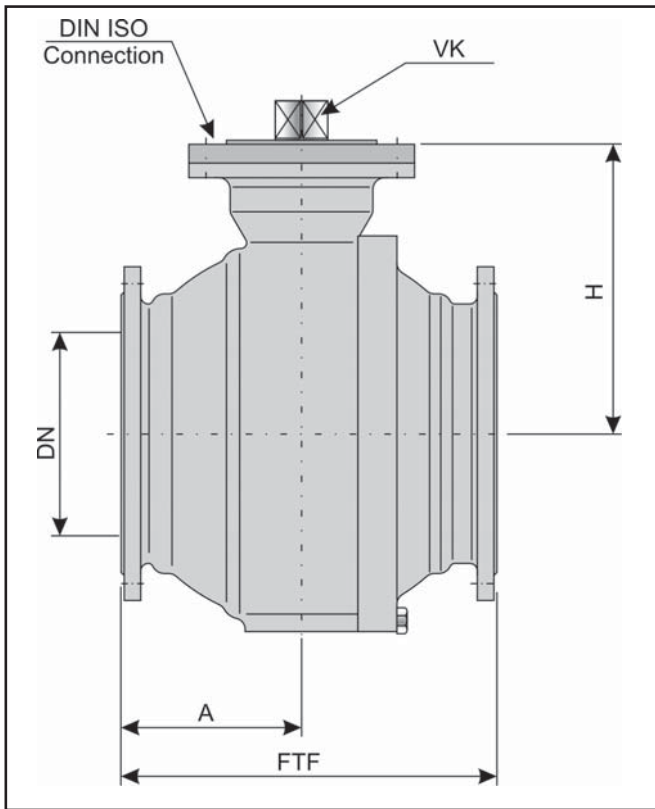


Fig. 7 - Ball valve

DN	150	200	250	300	400	500
PN	10 up to 40					
FTF DIN EN 558-1 serie 27	350	400	450	500	600	914
A	175	200	225	250	300	400
H	180	230	305	375	490	646
VK	30	36	36	50	65	80
DIN / ISO Connection	F14	F16	F16	F25	F30	F35
Weight	100	180	225	450	850	1350

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 26s,  
 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.

## 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](mailto:vertrieb@pfeiffer-armaturen.com) • Internet: [www.pfeiffer-armaturen.com](http://www.pfeiffer-armaturen.com)

Values subject to change