



BR 28y · Piggable Ball Valve

In flanged- and block version · DIN- and ANSI-Version



Applications

Stainless steel - Ball valve functioning as shut-off - and stopper ball valve in piggable systems or as virtually cavity-free shut off valve mounted on piggable T-Pieces

- **Nominal diameter DN 50 to 200 and NPS2 to 8**
- **Nominal pressure PN 25, PN 40 as well as cl150 and cl300**
- **Temperatures -10 °C to +200 °C (14 °F to 392 °F)**

The ball valve is designed as a two pieced ball valve, available as flanged ball valve for mounting between DIN-flanges or as block ball valve with threaded bores.

The valves in modular-assembly design have the following special features:

- Pipe inside diameter according to DIN 2430
- Seat rings, spring loaded on one side
- Floating ball, i.e. sealed by both seat rings
- Control shaft, sealed with a V-ring packing, pre-loaded with a disc spring set
- Blow out proof shaft
- Anti-static version with conductive shaft bearing
- Piggable flanges in the passage of the ball valve to DIN 2430-2 with projection. Non-piggable flanges are designed in accordance with DIN EN 1092-1 with sealing strip B1 or according to customer-specific requirements.
- Connections for actuators, according to DIN ISO 5211

Versions

BR 28y ball valve optionally in the following versions:

- Ball valve with hand-lever or manual gearbox
- Ball valve with pneumatic quarter-turn actuator (refer to respective data sheet for details)

For the various types of plant, the valve performs the following functions:

- In the **one / two-pig system**:
 - As piggable shut-off valve
 - As piggable stopper ball valve
 - As pig positioning

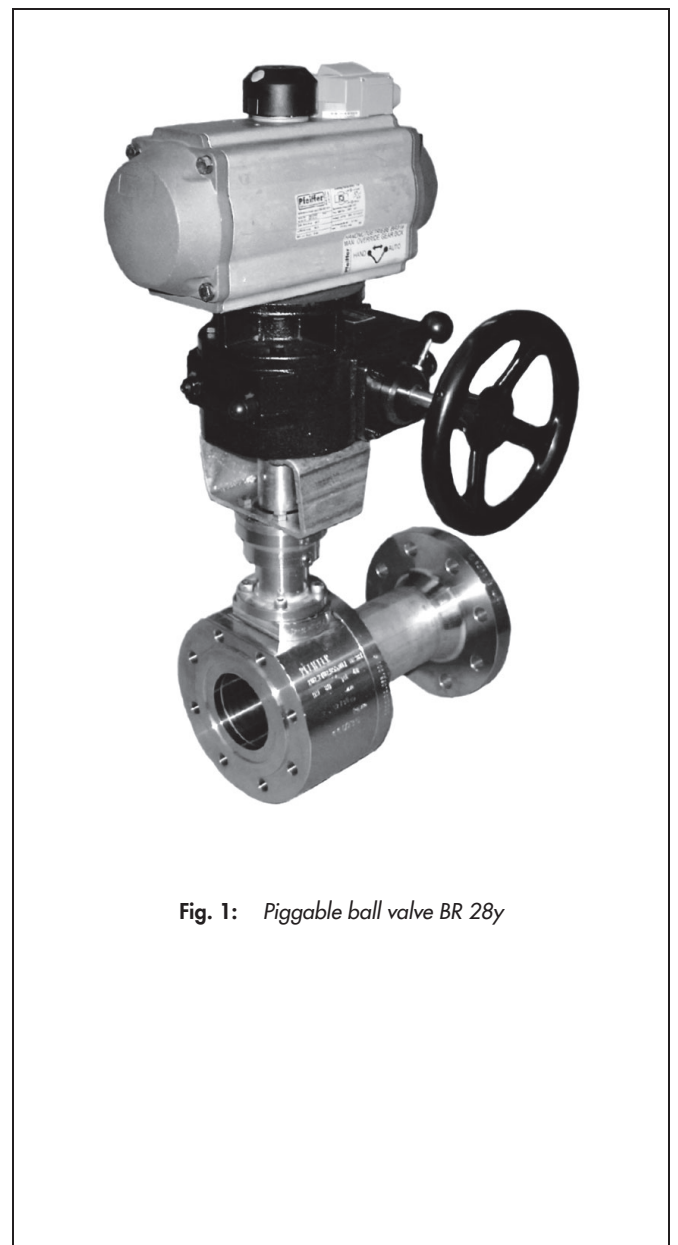


Fig. 1: Piggable ball valve BR 28y

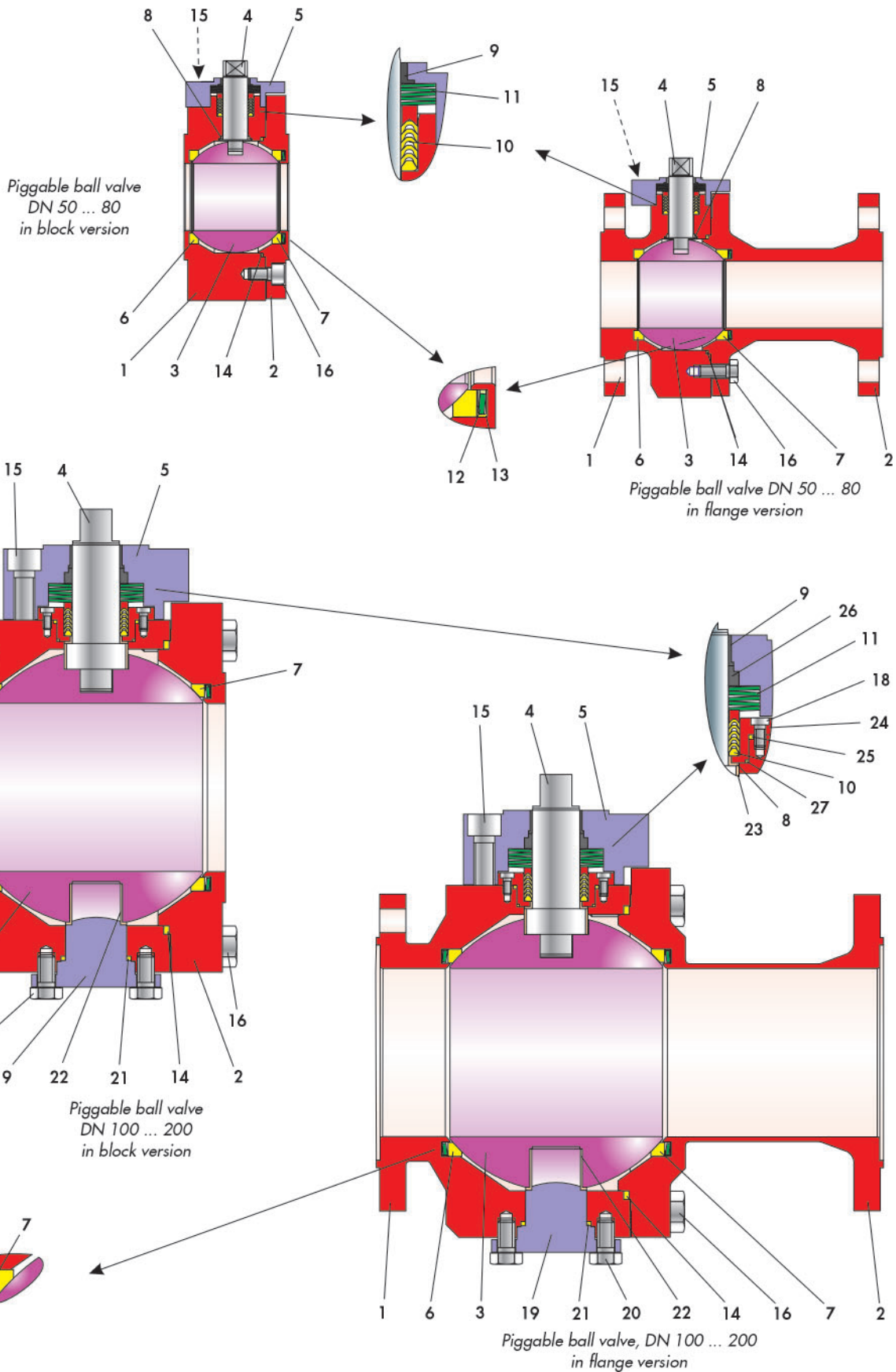


Fig. 2: Sectional drawings of piggable valves BR 28y

Table 1: List of parts

Item	Description
1	Main body
2	Side body
3	Ball
4	Control shaft
5	Stuffing box flange
6	Seat ring
7	Seat ring
8	Bearing bush
9	Bearing bush

Item	Description
10	V-ring packing
11	Disc spring set
12	Disc spring
13	Disc spring jacket
14	Sealing
15	Screw
16 ¹⁾	Stud bolt / Screw
17 ¹⁾	Nut
18	Screw plug

Item	Description
19	Trunnion
20	Screw
21	Ring
22	Bearing bush
23	Bearing bush
24	Packing bush
25	Ring
26	Bearing bush
27	Ring

¹⁾ Depending on the nominal width, stud bolts can be fitted with nuts or screws.

Special versions

- With contamination safeguard, to automatically detect leakage from the ball valve
- Different inside diameters

Additional equipment and add-on pieces

The following accessories are available either separately in combination for the control valve:

- Hand-lever (90°)
- Manual gear box (90°)
- Control shaft extension (100 mm standard)
- Interchangeable pneumatic and electric quarter-turn actuators
- Limit switches
- Solenoid valves
- Positioners
- Supply air pressure regulator/filter

Further attachments are available according to customer specifications.

Principle of operation

The BR 28y piggable ball valve permits full through flow in both directions.

The ball (3) with its cylindrical passage slew around the control shaft. The opening angle of the ball valve determines the flow rate between the body (1) and ball passage.

The sealing of the ball (3) is with interchangeable seat rings (6 and 7).

The control shaft is sealed with a PTFE V-ring packing (10). The pre-loaded tension is carried out with a disc spring set (11), which is located above the packing.

The external shaft can be fitted with a hand-lever, optionally, a pneumatic actuator or manual gear box can be adapted.

i Info

Before using the valve in hazardous areas, check whether this is possible according to ATEX 2014/34/EU by referring to the mounting and operating Instructions ► EB 28y.

Optional material combinations

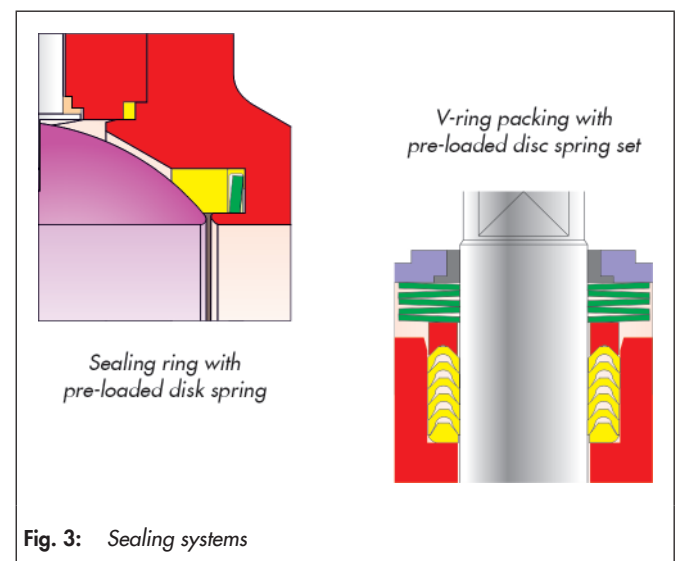
- Shaft and ball on request
- Seat rings in PTFE-compounds
- Sealing in graphite

Fail-safe position

If the valve is used in a piggable pipe system, the "HOLD" safety position is always preferable

- Piggable shut-off stopper ball valve with "HOLD" actuator. If the auxiliary power fails, the ball valve remains in its position.

Advantages of spring supported sealing system



- Maintenance free and self adjusting
- Two active seat rings
- Highest sealing effectiveness, even by extreme pressure, and temperature variations
- Longer service life
- Reduced increase in torque by rising temperature therefore, smaller actuator required
- **All in all:**
Extremely economic!

Table 2: General technical data

	DIN	ANSI
Nominal size	DN 50 ... 200	NPS2 ... 8
Nominal pressure	PN 25 ... 40	d150 ... 300
Temperature range	-10 °C ... +200 °C (14 °F ... 392 °F)	
Ball sealing	PTFE	
Leakage rate	Leakage rate A acc. to DIN EN 12266-1, P12	
Flanges	DIN 2430-2 (V)	
Packing	PTFE- V-ring packing with pre-loaded disc spring set	

Table 3: Materials

	DIN	ANSI
Main body	1.4571 / 1.4408	A182 F316 / A351 CF8M
Side body	1.4571 / 1.4581	A182 F316 / A351 CF8M
Ball	1.4571	A182 F316 / A351 CF8M
Shaft	1.4462	ASTM A182 Gr. F51
Seat rings	PTFE	
Disc spring	1.4122 coated with PTFE	
Packing	PTFE V-ring packing with disc springs in 1.8159, Delta Tone	
Lower bearing bush	PTFE with 25% glass	
Upper bearing bush	PTFE with 25% carbon	
Body sealing	PTFE	

Torque and breakaway torque

Table 4: Torque and breakaway torque

Pressure difference Δp in bar					0	2	4	6	8	10	16	25
Nominal diameter		M _{dmax.} in Nm		M _d in Nm	Breakaway torque M _{dl} in Nm							
DN	NPS	1.4462	1.4542									
50	2	226	497	17	25	28	32	36	40	43	55	71
80	3	437	961	49	70	79	89	98	108	118	146	190
100	4	749	1647	77	110	125	140	155	170	185	230	297
125	5	On request										
150	6	1497	3293	161	230	263	297	330	364	398	498	650
200	8	1497	3293	280	400	440	516	574	633	692	866	-

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 periods may affect the permissible torque and breakaway torque.

Dimensions and weights

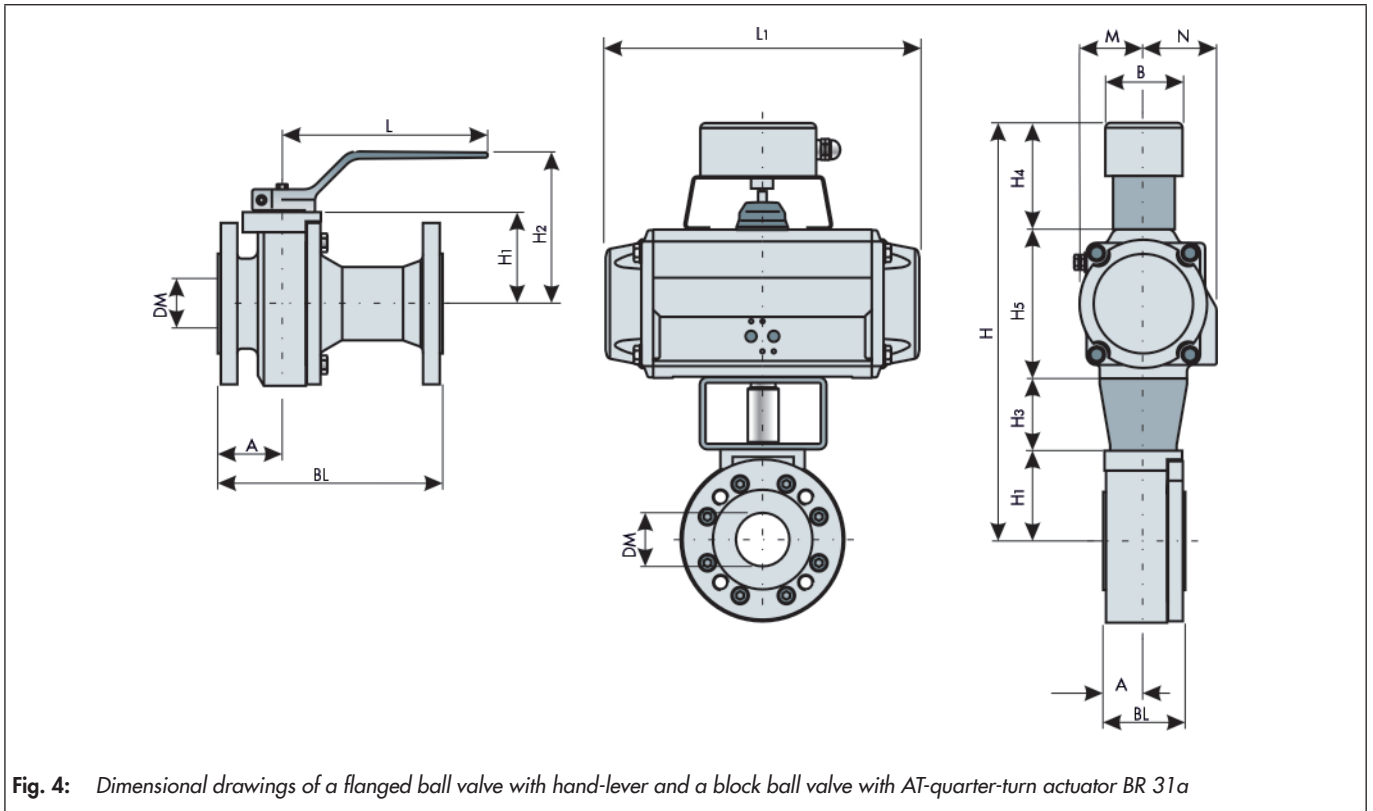


Fig. 4: Dimensional drawings of a flanged ball valve with hand-lever and a block ball valve with AT-quarter-turn actuator BR 31a

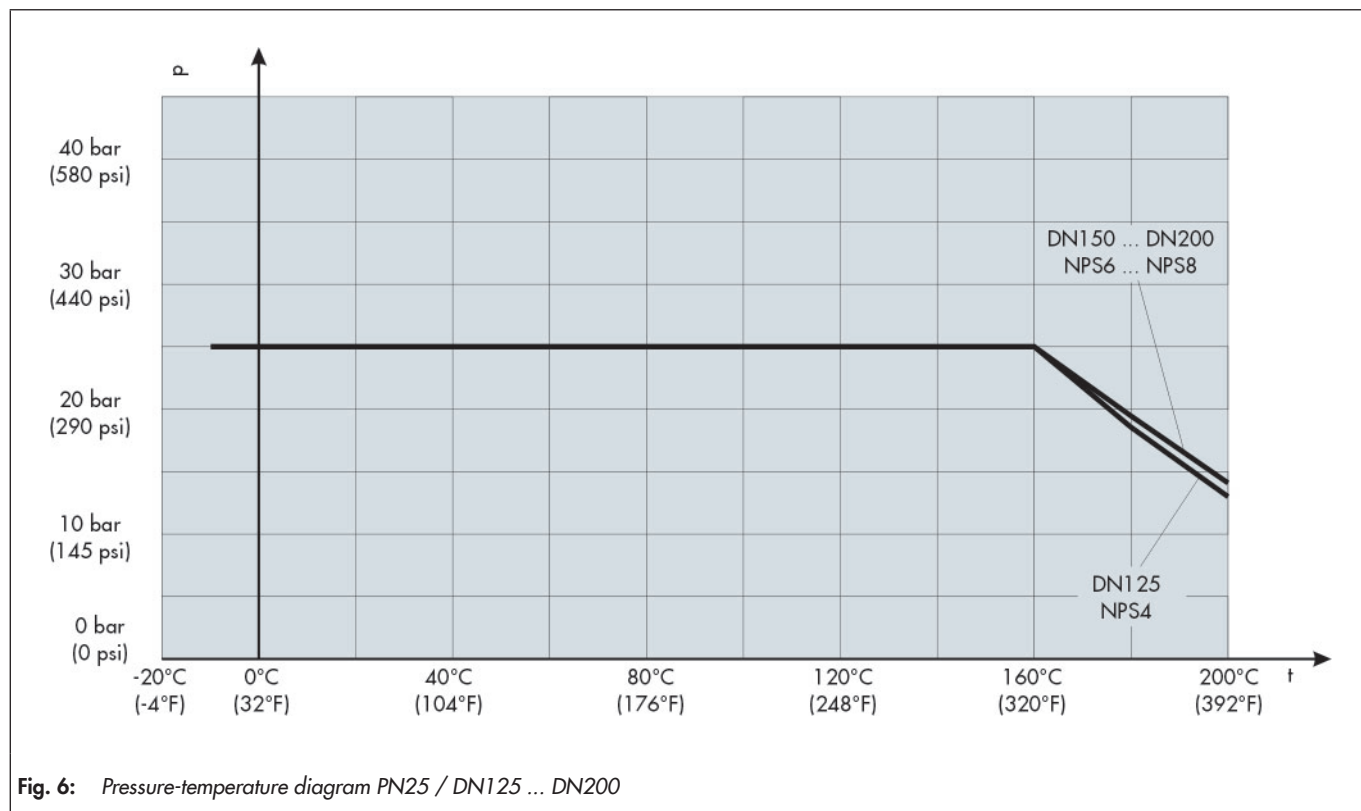
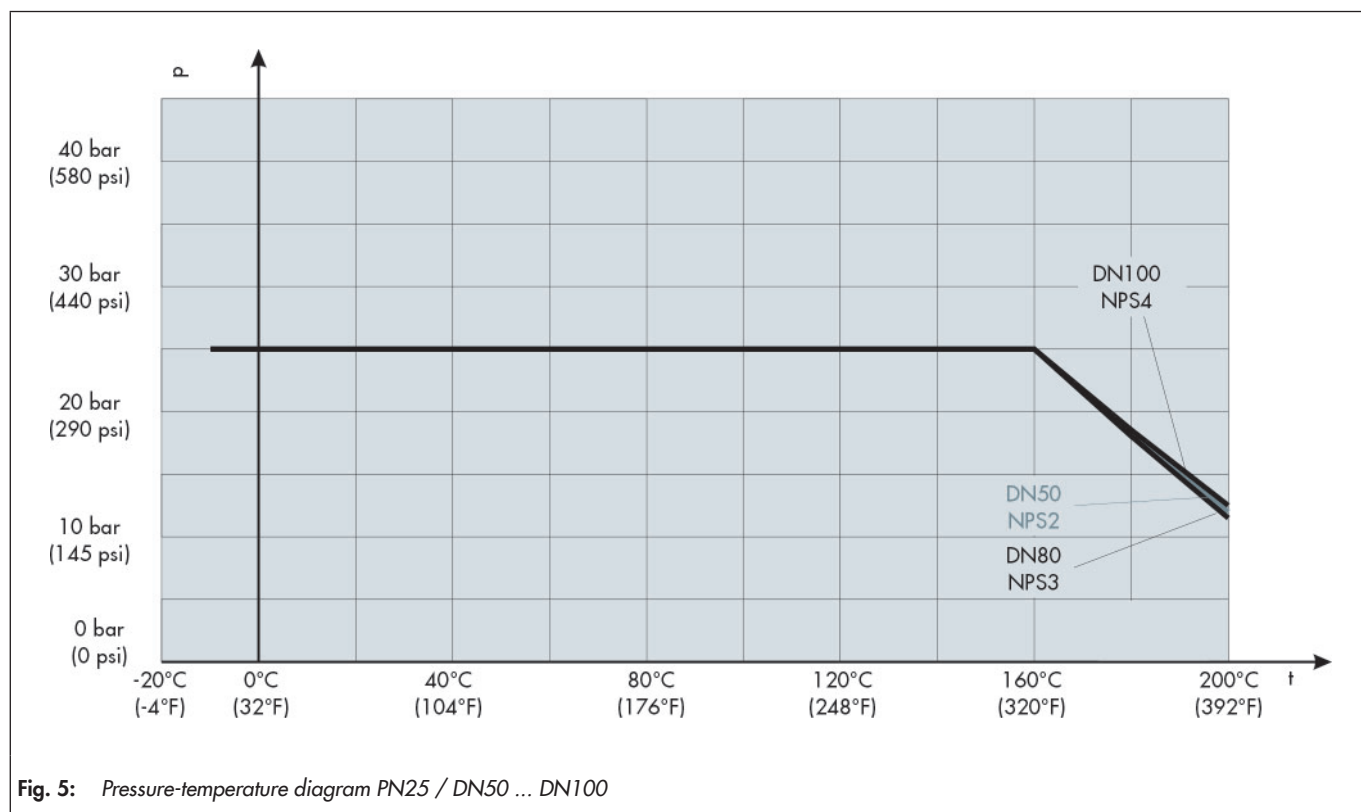
Table 5: Dimensions in mm and weights in kg

Nominat size	DN 50	DN 80	DN 100	125	DN 150	DN 200
	NPS2	NPS3	NPS4	NPS5	NPS6	NPS8
DM	54.5	82.5	107.1	131.7	159.3	206.5
Flange ball valve	BL	230	310	350	480	600
	A	65	85	98	165	195
	Weight	12	28	48	110	250
Block ball valve	BL	90	114	190	250	350
	A	40	55	90	120	174
	Weight	8	18	33	70	370
H1	93,5	118,5	165	On request	225	268.5
H2	161	186,5	233		-	-
L	350	350	350		-	-
Actuator DAP	100	220	450		600	900
H	H1 + H3 + H4 + H5					
H3	60	80	80	90	90	90
H4	110	110	110	110	110	110
B	80	80	80	80	80	80
DIN ISO Connection	F05	F07	F10	F12	F14	F14
DAP/SRP	100	220	450	600	900	1200
L1	241	304	394.5	422.5	474	528
H5	115	145	177	196	220.5	245
M	49.5	64	80	88	99	110
N	56.5	72	86	93	101	111.5
Weight DAP	3.8	8.4	14.5	18	25	35.5
Weight SRP	4.4	9.8	18.1	24	31.6	45.1

Pressure-temperature diagram

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

Process data and medium can affect the values of the diagram.



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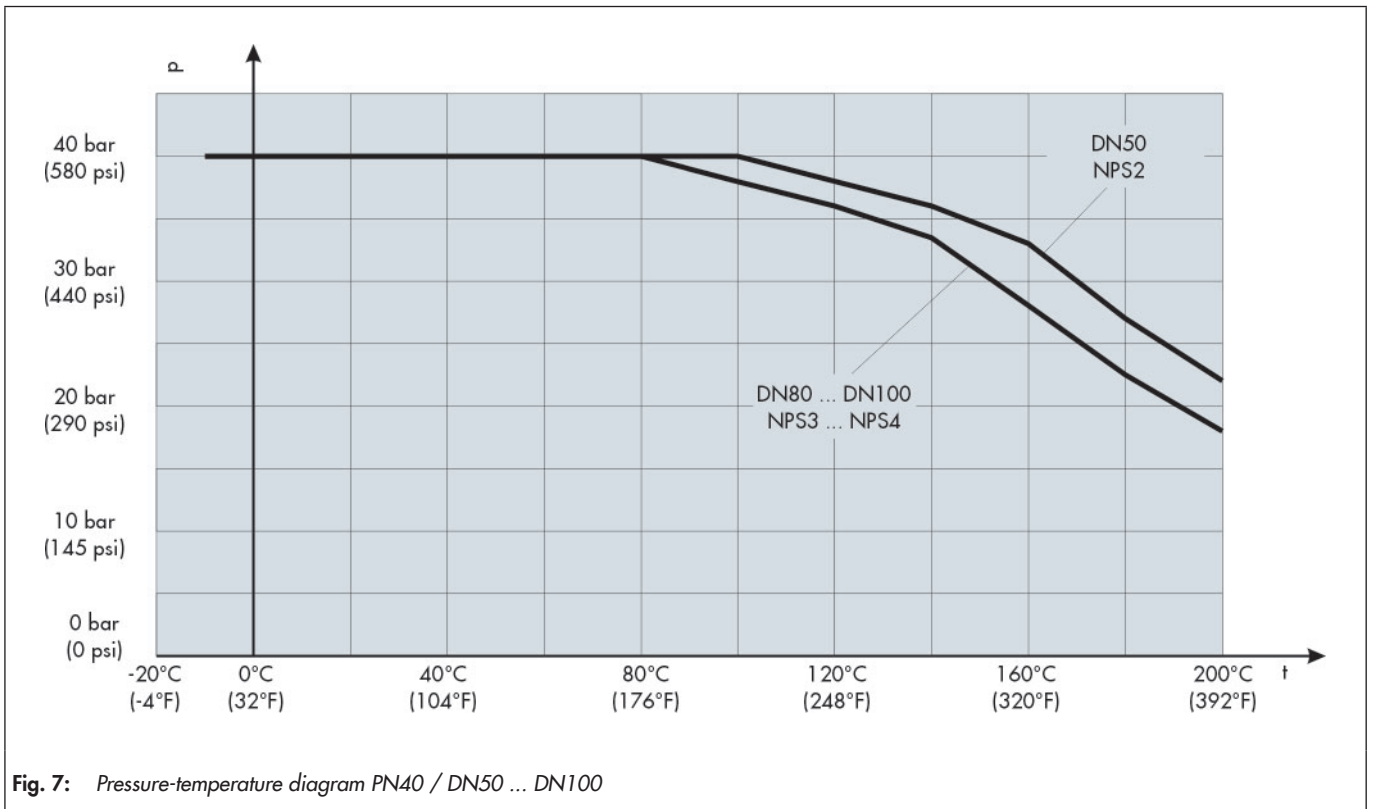


Fig. 7: Pressure-temperature diagram PN40 / DN50 ... DN100

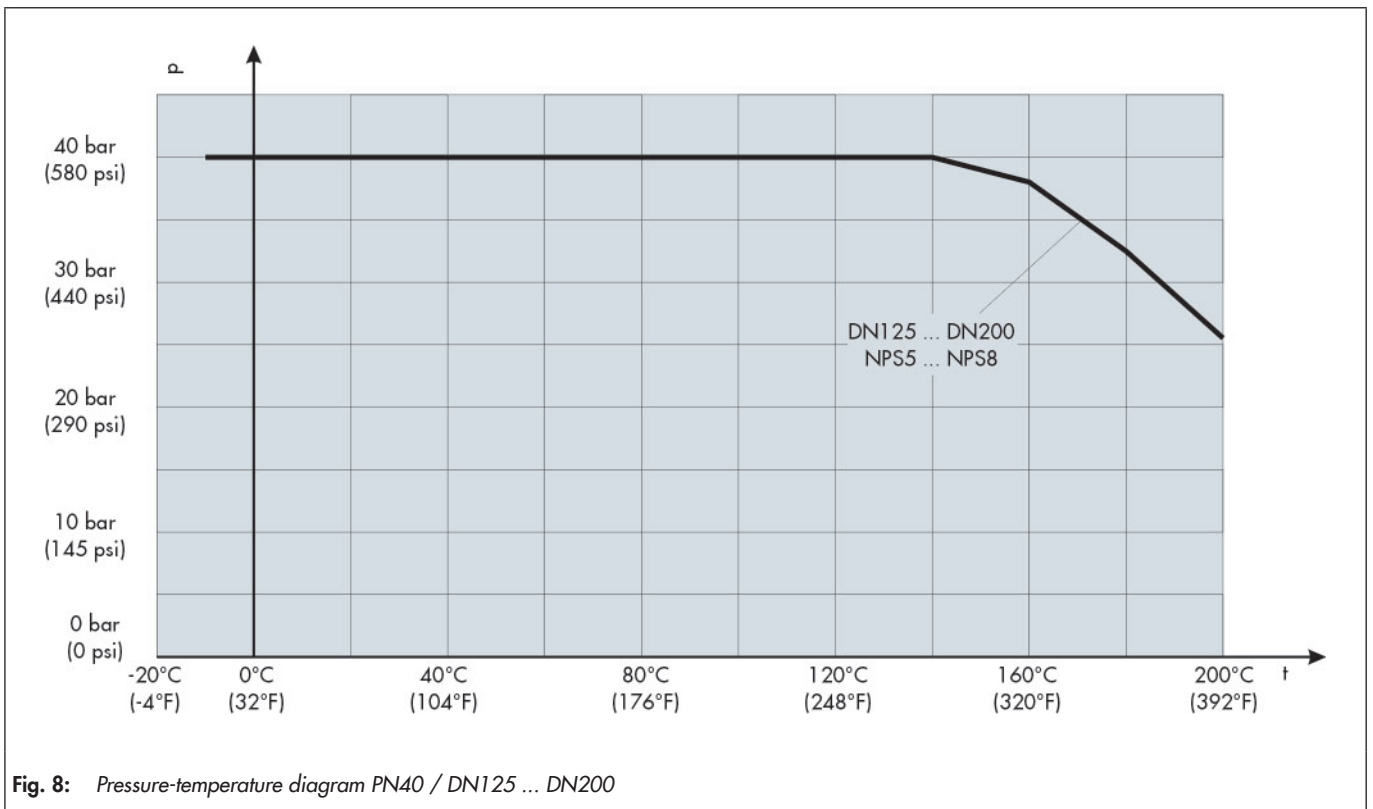


Fig. 8: Pressure-temperature diagram PN40 / DN125 ... DN200

Selection and sizing of the metering valve

1. Determine the nominal diameter
2. Select the valve according to table 2, table 3 and the pressure-temperature diagram
3. Select the actuator according table 5
4. Select additional equipment / accessories

Ordering text

Piggable Ball Valve in stainless steel: BR 28y
Nominal size: DN/NPS
Nominal pressure: PN/Class
Optional special version:
Actuator (brand name):
Supply pressure: bar
Fail-safe position:
Limit switch (brand name):
Solenoid valve (brand name):
Positioner (brand name):
Others:

Associated documents

Associated Mounting and Operating Instructions ▶ EB 28y
Associated Safety Manual ▶ SH 28y
For pneumatic actuators ▶ TB 31a

Info

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 confirmation.
