



## BR 28e · Head Station with Pig loading ball valve DIN and ANSI Version



### Applications

Stainless steel ball valve, consisting of piggable pipe section with overlapping-free pig loading ball valve as head station in one-pig system and two-pig systems:

- **Nominal diameters DN 50 to 200 und 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 pig loading ball valve with blind hole and a pipe section with the necessary connections for pig control, which, thanks to its unique design, enables completely safe and fast pig entry and exit. The modular ball valves can be combined with various additional parts and 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 disc spring set
- Blow out proof control 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

The valve fulfills the following functions for the different types of designs:

- As manual operated head station in the **One-pig system**
- As manual operated head station in the **Two-pig system**

### Special versions

- With pigging indicator tab for automatic systems for mounting magneto-inductive pigging sensors
- With pigging sensing devices for manual detection
- Heating jacket



*For safety reasons, an automation to the Pigging head station should be avoided at all times!*

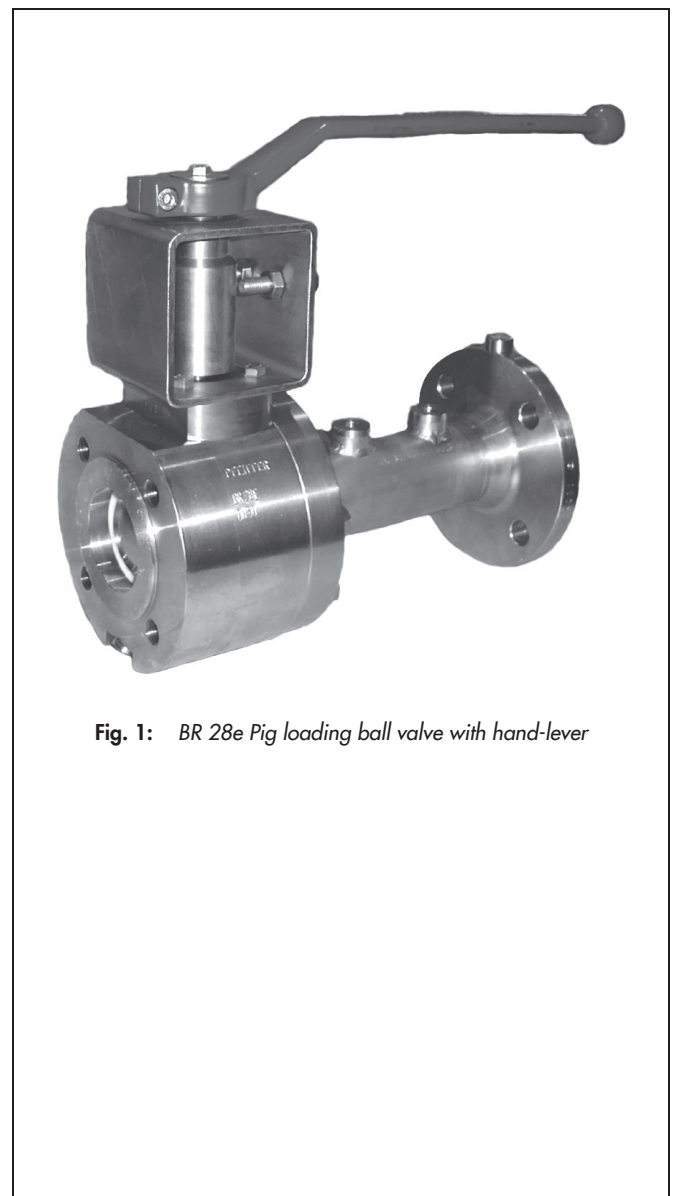


Fig. 1: BR 28e Pig loading ball valve with hand-lever

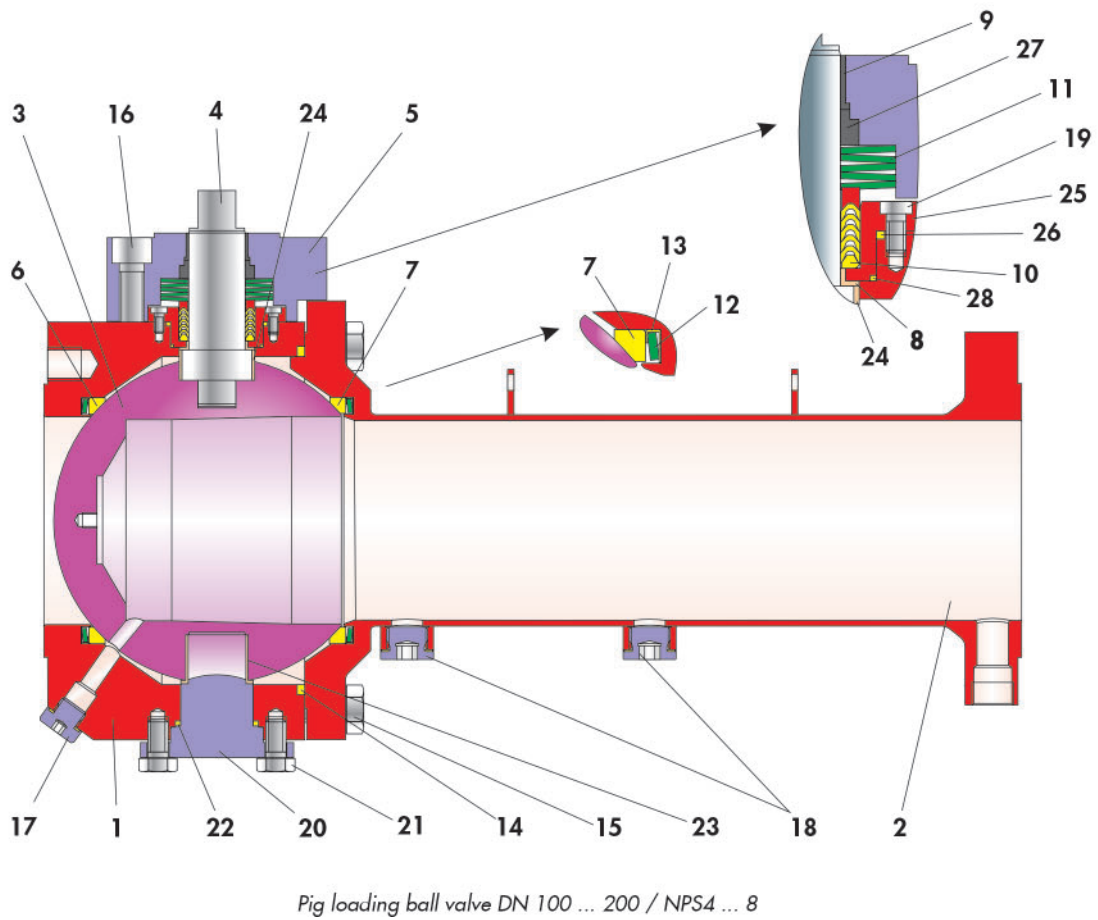
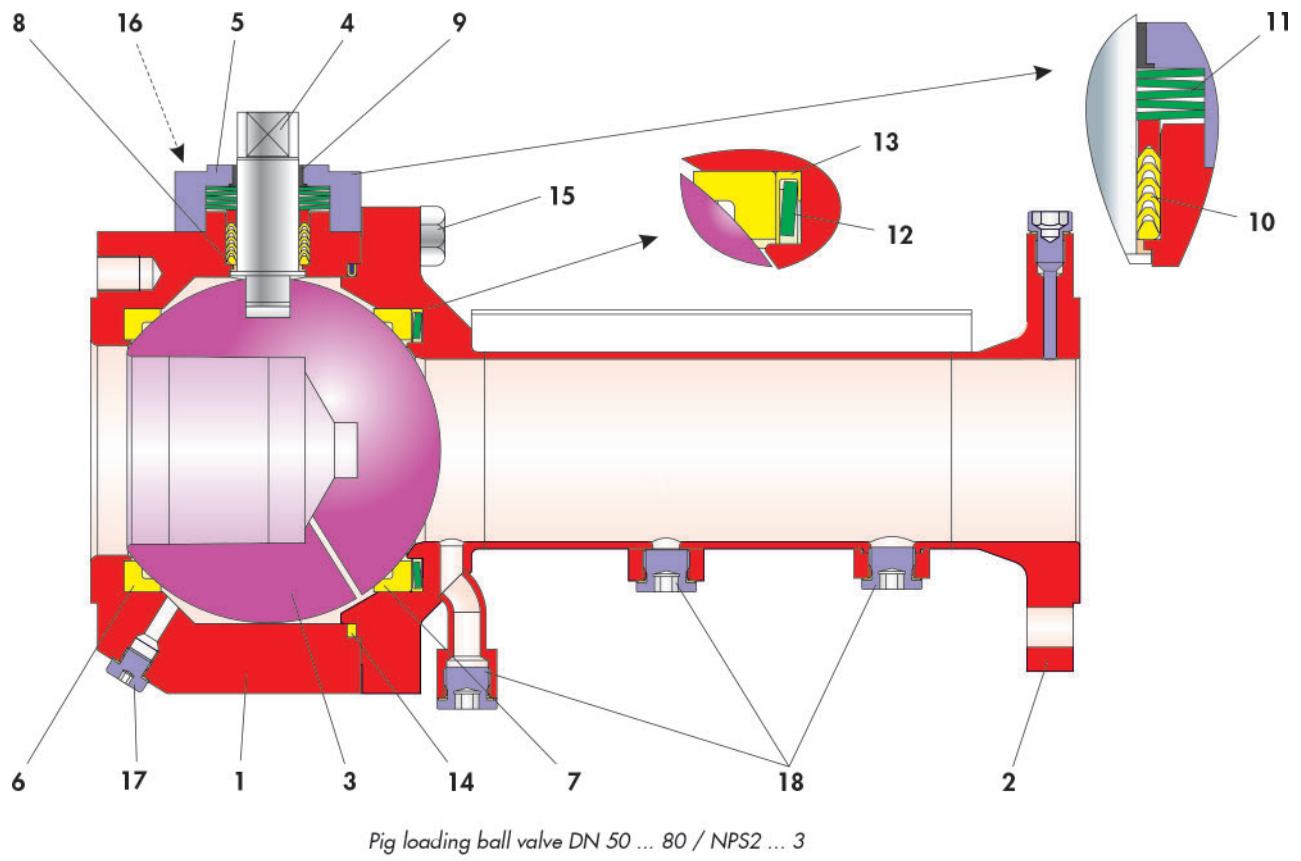


Fig. 2: Sectional drawing of the BR 28e Pig loaded ball valve

**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
10	V-ring packing
11	Disc spring set
12	Disc spring
13	Disc spring jacket
14	Sealing

Item	Description
15	Screw
16	Screw
17	Screw plug
18	Screw plug
19	Screw
20	Trunnion
21	Screw
22	Ring
23	Bearing bush
24	Bearing bush
25	Packing bush
26	Ring
27	Bearing bush
28	Ring

### Additional equipment and add-on pieces

For the ball valves, the following accessories are available either separately or in combination:

- Hand-Lever (180°)
- Manual gear box (180°)
- Control shaft extension (100 mm standard)
- Limit switch
- Pig-dockin with/without cover

Further attachments are available according to customer specifications.

### Principle of operation

The pig loading ball valves of BR 28e are used for removing, or inserting the pigs into a piggable piping system.

The ball (3) with a slight tapered blind bore slew around the middle axis. The ball, in which the pig is located in the bore, when rotated 180° the pig can either be inserted into, or removed from the pipeline system.

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 control shaft can be fitted with a hand-lever, optionally, a manual gear box can be adapted.

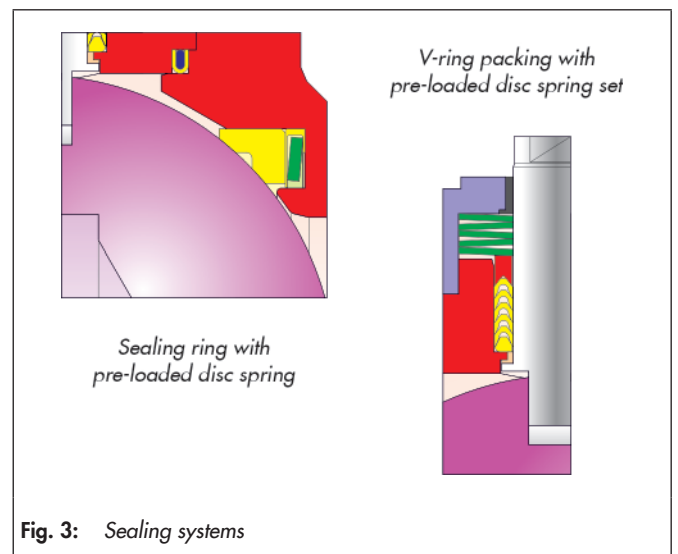
#### **i** Info

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

### Optional material combinations

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

### Advantages of spring supported sealing system



**Fig. 3:** Sealing systems

- 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 according to DIN EN 12266-1, P12	
Flanges	DIN 2430	
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	A351 CF8M
Control 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: Max. permissible torque, required torque and breakaway torque**

Pressure difference		$\Delta p$ in bar			0	2	4	6	8	10	16
Nominal diameter		M <sub>dmax.</sub> in Nm		M <sub>d</sub> in Nm	Breakaway torque M <sub>dl</sub> in Nm						
DN	NPS	1.4462	1.4542								
50	2	641	997	42	60	66	72	79	85	91	110
80	3	641	997	77	110	125	140	155	170	185	230
100	4	2131	3315	119	170	187	219	244	269	294	368
125	5	2177	3387		On request						
150	6	4828	7168	190	270	309	349	387	427	467	585
200	8	4201	6209		On request						

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

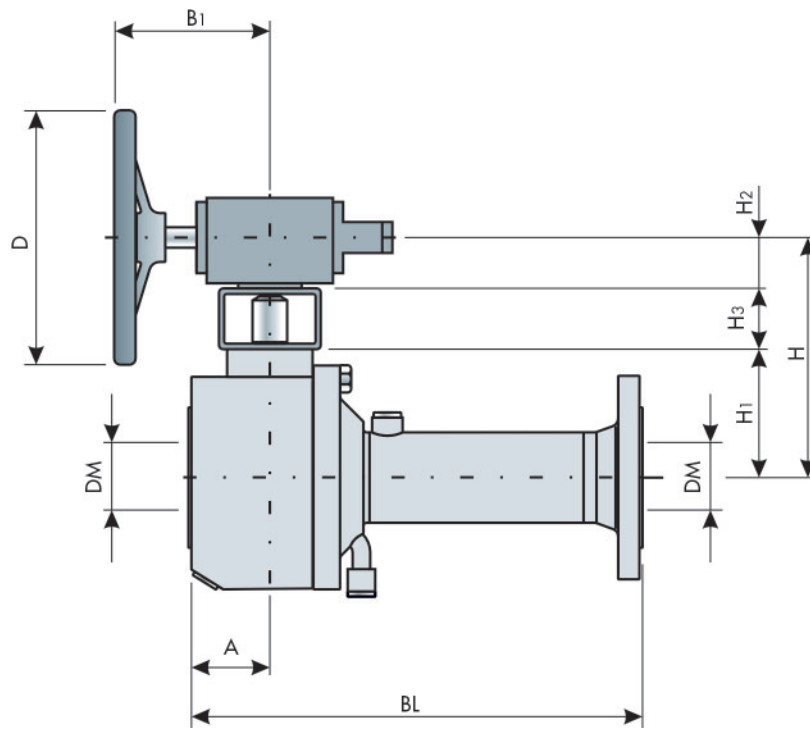


Fig. 4: Dimensional drawing Pig loading ball valve

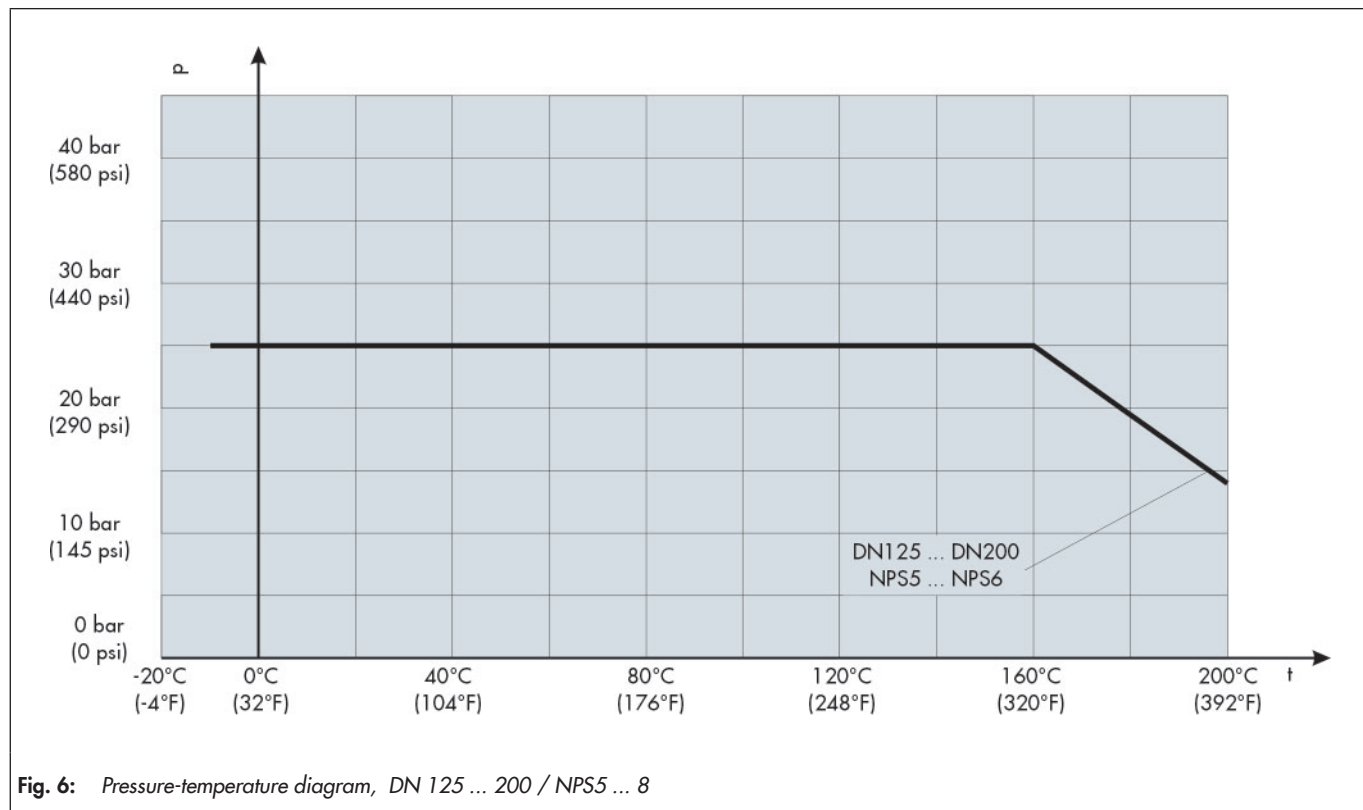
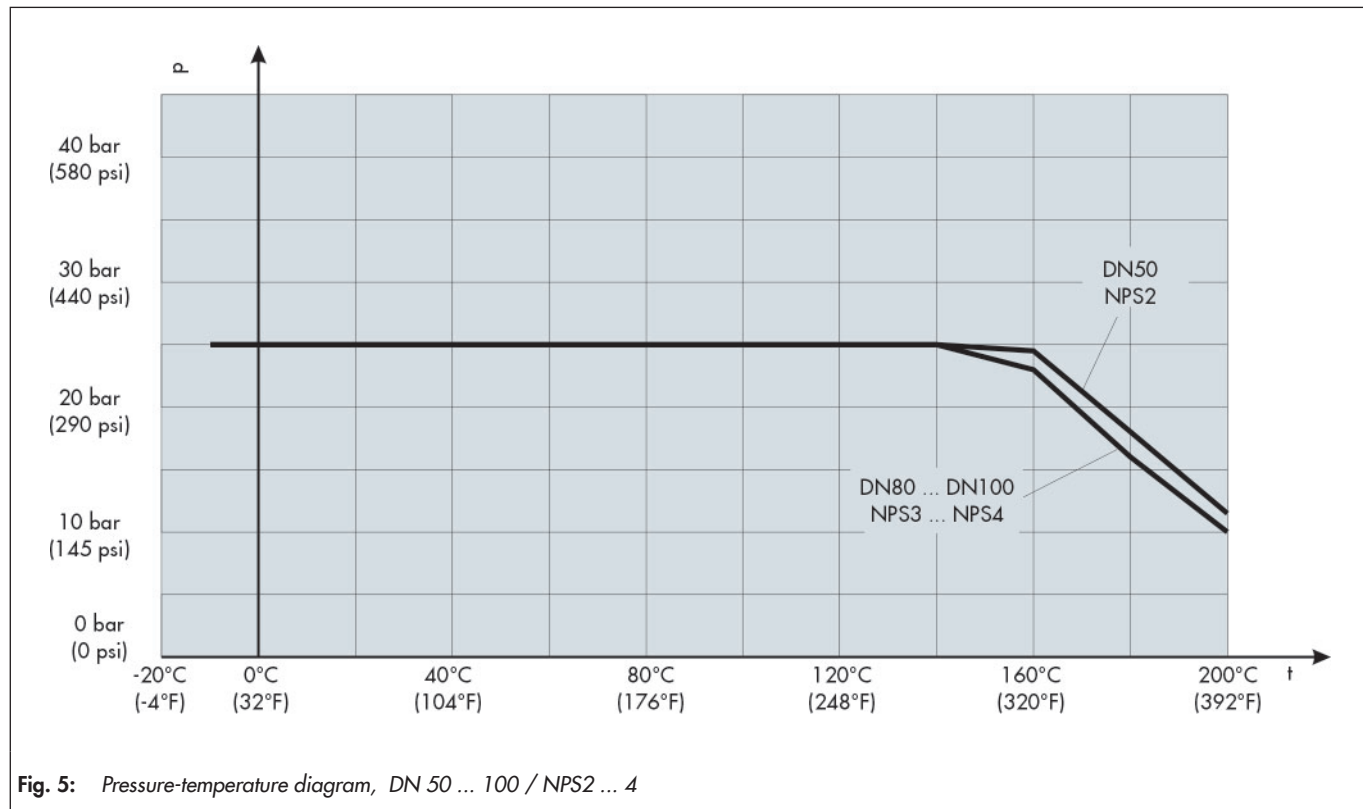
Table 5: Dimensions in mm and weights in kg

Nominal size	DN 50	DN 80	DN 100	DN 125	DN 150	DN 200
	NPS2	NPS3	NPS4	NPS5	NPS6	NPS8
DM	54.5	82.5	107.1	131.7	159.3	206.5
BL	327	447	560	620	780	940
A	56.5	80	95	118	138	174
H	205	236	301	325	371	422
H1	95	126	165	179	225	276
H2	50	50	56	56	56	56
H3	60	60	80	90	90	90
Actuator	GS 40.2	GS 40.2	GS 63.2	GS 63.2	GS 63.2	GS 63.2
DIN ISO connection	F07	F07	F10	F14	F14	F14
Weight approx. kg	25	40	70	140	220	310

Auma 180° Manual Gear-box	GS 40.2	GS 50.3	GS 63.2
B1	153	154	187
D	250	250	315
Weight approx. kg	4	6	10

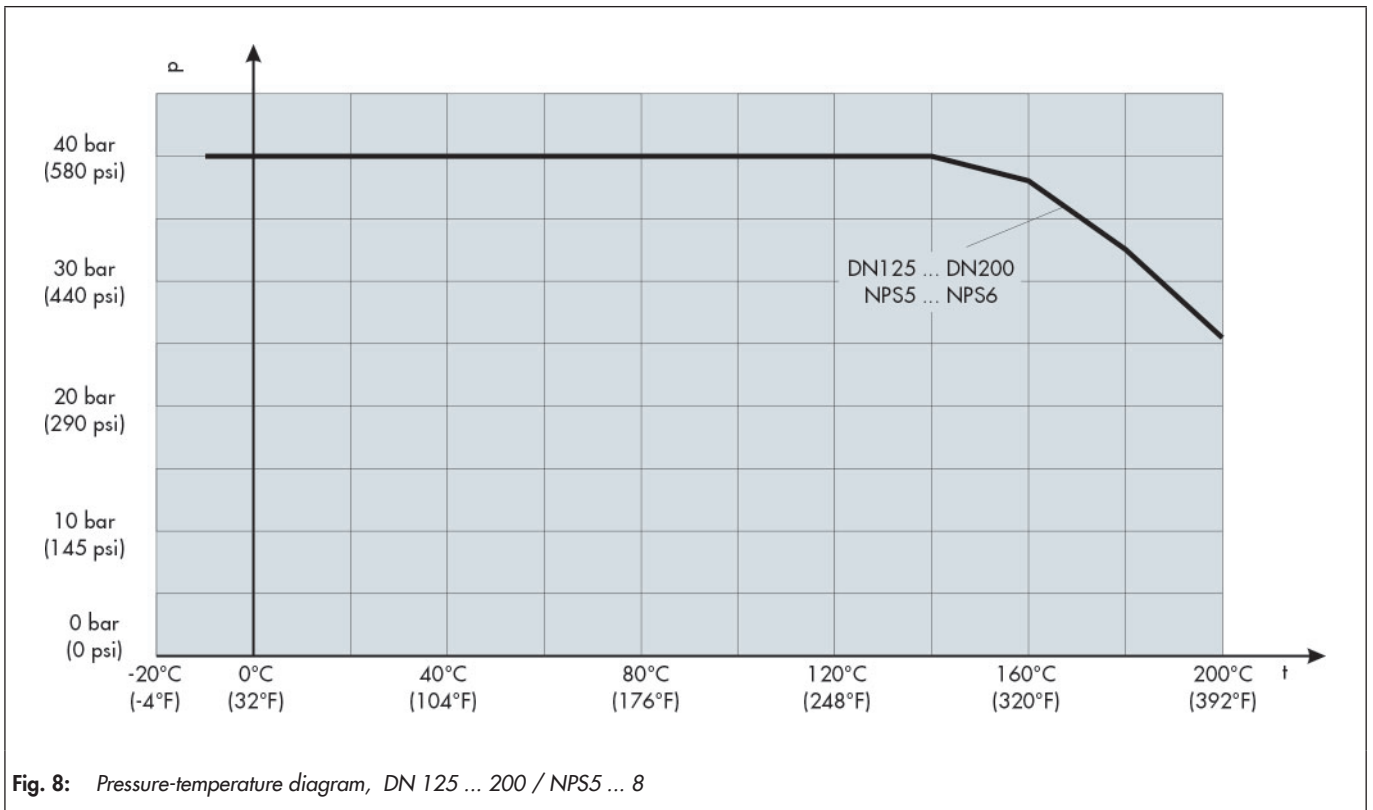
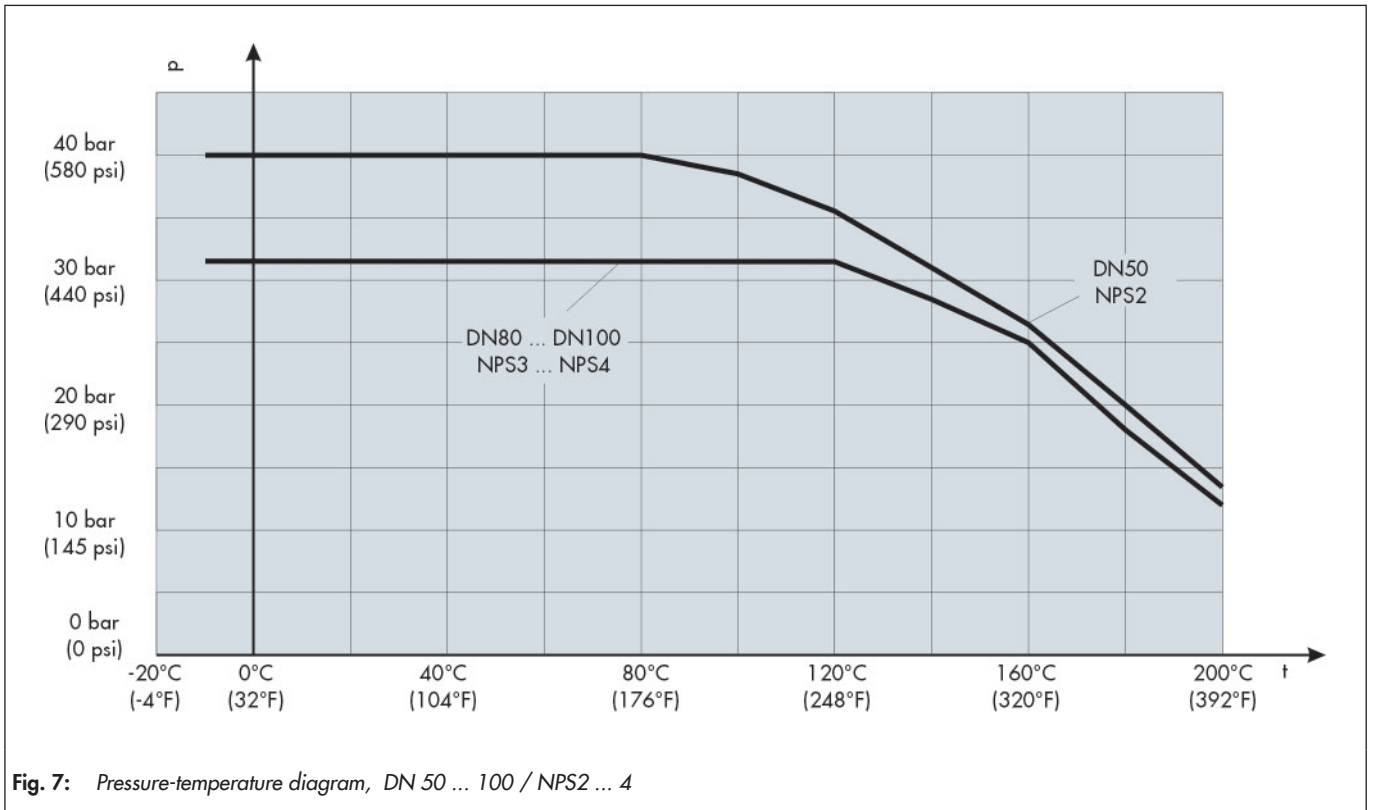
## Pressure-temperature diagram, PN 25 / c1150

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



## Pressure-temperature diagram, PN 40 / cI300

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



## Selection and sizing of the metering valve

1. Determine the nominal diameter
2. Select the valve acc. to table 2, table 3 and the pressure-temperature diagram Fig. 5-8
3. Select the actuator acc. table 5
4. Select additional equipment / accessories

## Ordering text

Head station in stainless steel:	BR 28e
Nominal size:	DN/NPS. ....
Nominal pressure:	PN/Class ....
Optional special version:	....
Actuator (brand name):	....
Fail-safe position:	....
Limit switch (brand name):	....
Others:	....

## Associated documents

Associated Mounting and Operating Instructions ► EB 28e

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### **i** 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.*

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