

# Alfa Laval Safety Valve

Safeguarding your system

1.8

## Concept

The Alfa Laval Safety Valve is a spring loaded safety valve used to prevent overpressure in tanks and vessels in the dairy, food and beverage, and biopharm industries to reliably avoid damages to human beings and equipment.

## Working principle

It is used to prevent inadmissible over pressures of fluids in tanks, containers and plant sections. From the factory the valve is configured with a set pressure upon request that is greater than the operating pressure. The valve opens against a spring force if the operating pressure increases the set pressure. Preferably, the Alfa Laval Safety Valve should be installed vertically. If mounted horizontal the set pressure will be a bit lower than specified due to the missing weight of the piston. Highest effect on DN80 and DN100.

## Standard Design

The Alfa Laval Safety Valve comes in sizes from DN25 to DN100 with spring loaded set pressure range from 0.2 to 12 bar. \*The valve can be pneumatic or manually operated. Alfa Laval Safety Valve is delivered with PED certificate. Compliance to EN 4126-1 Compliance to PED 2014/68/EC of the European Community. Fluid group II (Non-hazardous fluids).

The safety valve is available for both liquids and gases\*

\*(Note: Manually reduced pressure range)



## TECHNICAL DATA

### Temperature

Temperature range:	+5°C to +95 °C
Max. sterilisation temperature, dry steam:	140 °C

\*DN25 for gas applications is only available for set pressure up to 1.5 bar

## PHYSICAL DATA

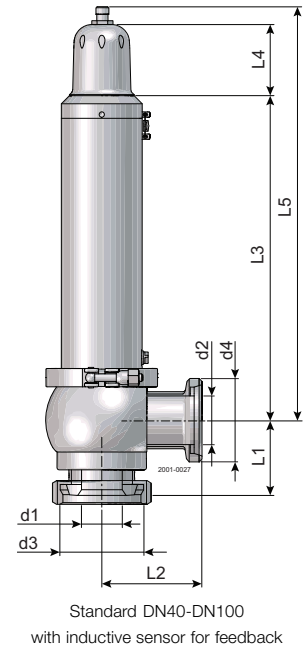
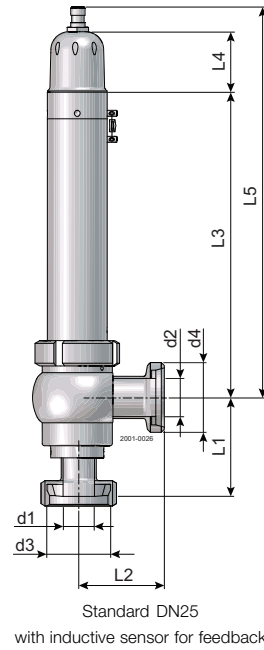
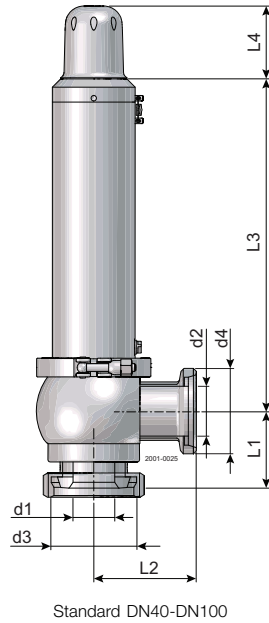
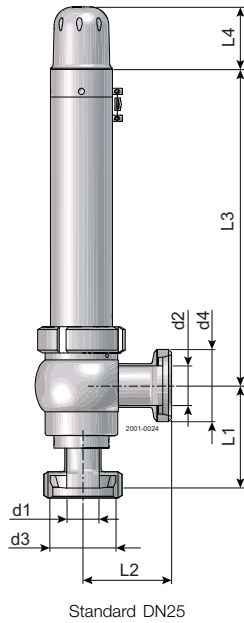
### Materials

Product wetted parts:	1.4404 (316L)
Other steel parts:	1.4301 (304)
Seals:	EPDM
External finish:	Ra 1.5-2.5 µm
Internal finish:	Ra 0.8 µm
Connections:	Liner/nut - male DIN 11851

### Option:

Inductive sensor for feedback is available for standard and pneumatic lifting - see instruction manual for detail.

Dimensions:



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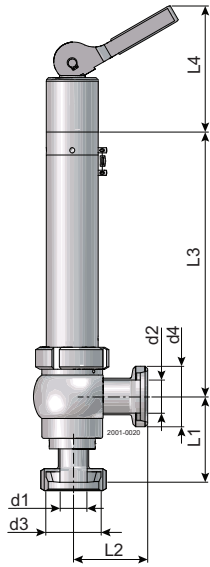
Standard

Size	d1	d2	d3	d4	L1	L2	L3	L4	Kg
DN25	26	32	Rd52x1/6	Rd58x1/6	82	72	253	50	6.8
DN40	32	38	Rd65x1/6	Rd65x1/6	68	82	255	66	9.1
DN50	38	50	Rd78x1/6	Rd78x1/6	70	93	301	66	1.3
DN65	50	66	Rd95x1/6	Rd95x1/6	85	105	402	66	15.0
DN80	66	81	Rd110x1/4	Rd110x1/4	100	115	407.5	66	22.0
DN100	81	100	Rd130x1/4	Rd130x1/4	130	130	418	66	28.2

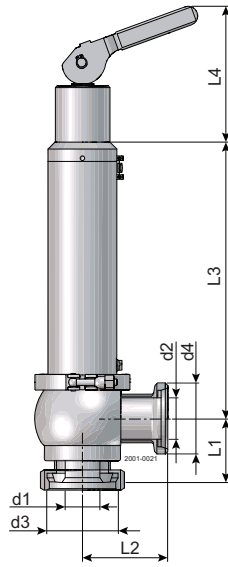
Standard with inductive sensor for feedback

Size	d1	d2	d3	d4	L1	L2	L3	L4	L5	Kg
DN25	26	32	Rd52x1/6	Rd58x1/6	82	72	253	50	324	6.8
DN40	32	38	Rd65x1/6	Rd65x1/6	68	82	255	66	338	9.1
DN50	38	50	Rd78x1/6	Rd78x1/6	70	93	301	66	384	1.3
DN65	50	66	Rd95x1/6	Rd95x1/6	85	105	402	66	484	15.0
DN80	66	81	Rd110x1/4	Rd110x1/4	100	115	407.5	66	489	22.0
DN100	81	100	Rd130x1/4	Rd130x1/4	130	130	418	66	501	28.2

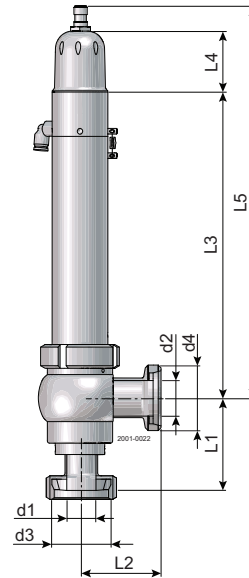
Dimensions:



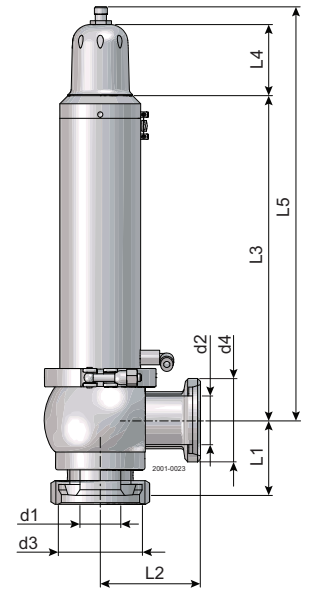
Manual lifting DN25



Manual lifting DN40-DN100



Pneumatic lifting DN25  
with inductive sensor for feedback



Pneumatic lifting DN40-DN100  
with inductive sensor for feedback

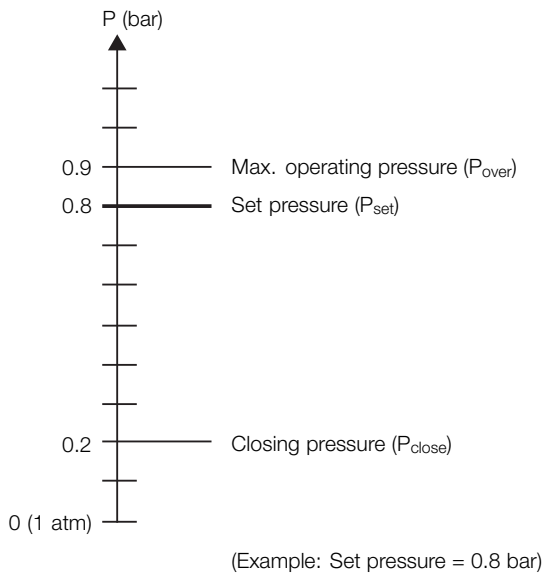
Manual lifting

Size	d1	d2	d3	d4	L1	L2	L3	L4	Kg
DN25	26	32	Rd52x1/6	Rd58x1/6	82	72	253	141-182	7.5
DN40	32	38	Rd65x1/6	Rd65x1/6	68	82	255	152-232	10.3
DN50	38	50	Rd78x1/6	Rd78x1/6	70	93	301	154-234	15.5
DN65	50	66	Rd95x1/6	Rd95x1/6	85	105	402	153-233	16.2
DN80	66	81	Rd110x1/4	Rd110x1/4	100	115	407.5	152.5-232.5	23.2
DN100	81	100	Rd130x1/4	Rd130x1/4	130	130	418	152-232	29.6

Pneumatic lifting with inductive sensor for feedback

Size	d1	d2	d3	d4	L1	L2	L3	L4	L5	Kg
DN25	26	32	Rd52x1/6	Rd58x1/6	82	72	253	50	324	6.8
DN40	32	38	Rd65x1/6	Rd65x1/6	68	82	255	66	338	9.1
DN50	38	50	Rd78x1/6	Rd78x1/6	70	93	301	66	384	1.3
DN65	50	66	Rd95x1/6	Rd95x1/6	85	105	402	66	484	15
DN80	66	81	Rd110x1/4	Rd110x1/4	100	115	407.5	66	489	22
DN100	81	100	Rd130x1/4	Rd130x1/4	130	130	418	66	501	28.2

Opening and closing characteristics for incompressible fluids (Liquid)



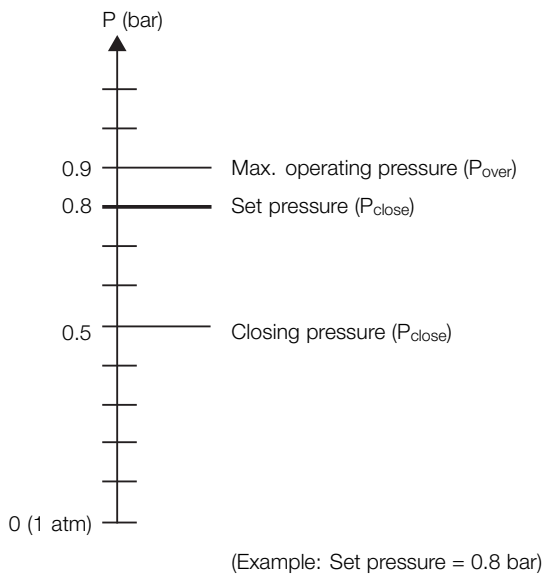
**Max. operating pressure (P<sub>over</sub>):**

10 % of set pressure or 0.1 bar, whichever is the greater.

**Closing pressure (P<sub>close</sub>):**

Maximum 20% or 0.6 bar below set pressure, whichever is the greater

Opening and closing characteristics for compressible fluids (Gas)



**Max. operating pressure (P<sub>over</sub>):**

10 % of set pressure or 0.1 bar, whichever is the greater.

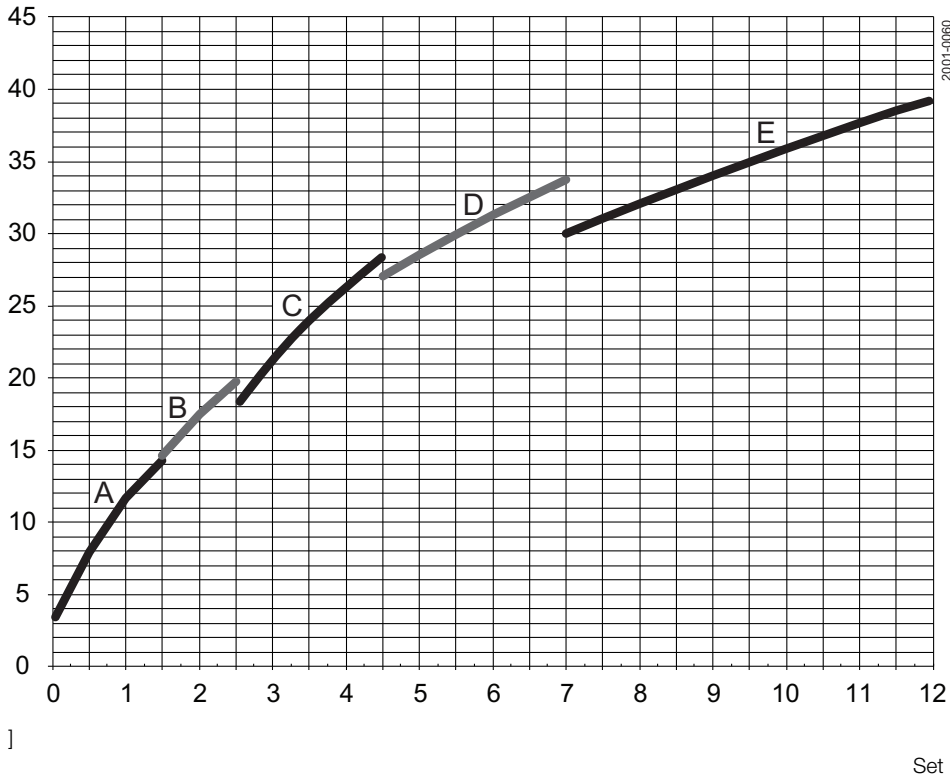
**Closing pressure (P<sub>close</sub>):**

Maximum 15% or 0.3 bar below set pressure, whichever is the greater

Blow-off performance chart

DN25 set pressure: 0.2 - 12.0 bar for liquids (water 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.5 - 1.5

B = 1.6 - 2.5

C = 2.6 - 4.5

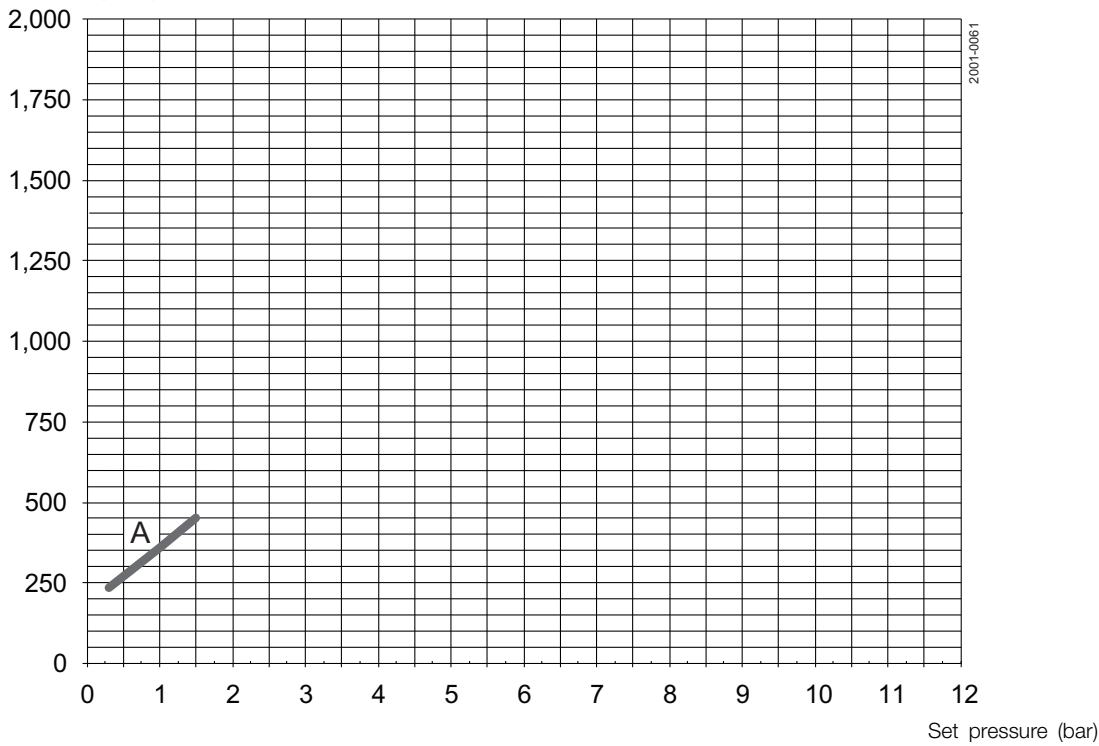
D = 4.6 - 7.0

E = 7.1 - 12.0

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DN 25 set pressure: 0.2 - 1.5 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].



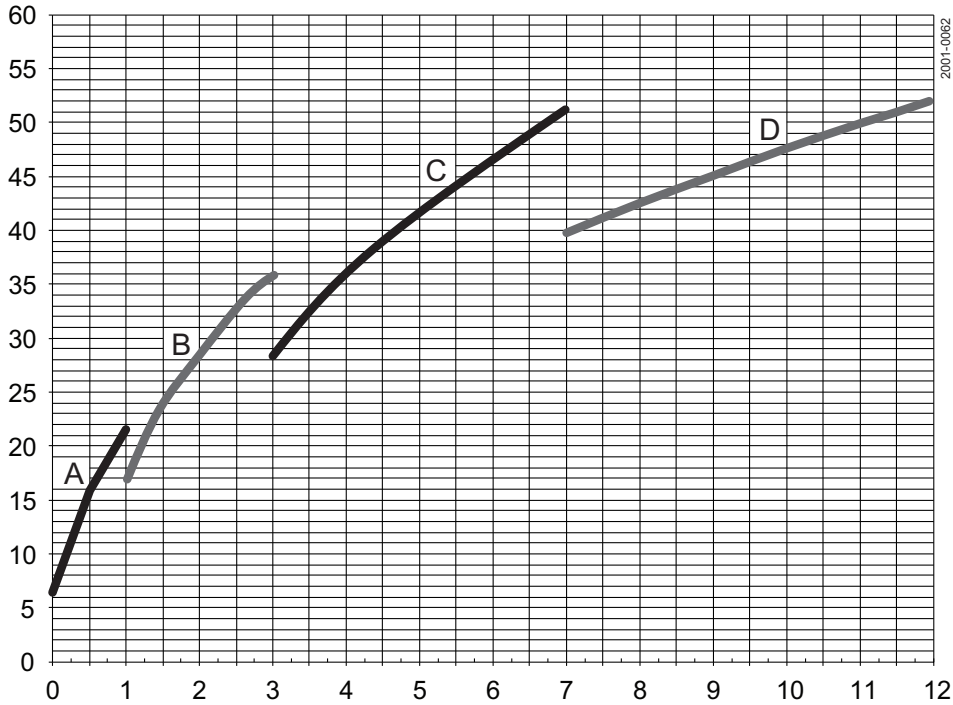
Pressure range [bar]

A = 0.2 - 1.5

Blow-off performance chart

DN 40 set pressure: 0.2 - 12.0 bar for liquids (water 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.2 - 1.0

B = 1.1 - 3.0

C = 3.1 - 7.0

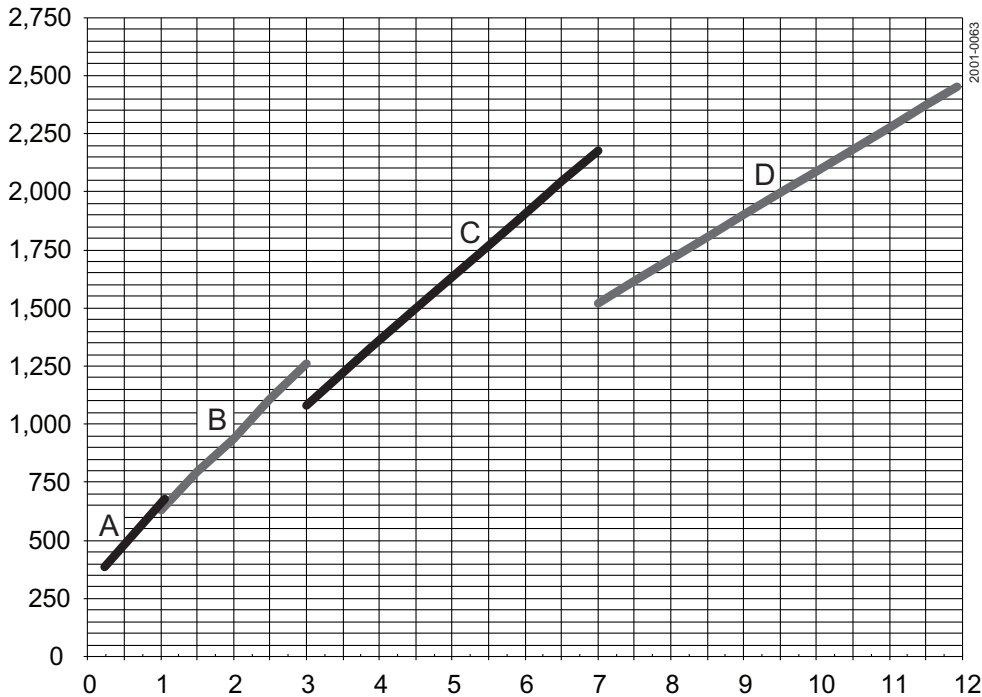
D = 7.1 - 12.0

ne

Set pressure (bar)

DN 40 set pressure: 0.2 - 12.0 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.2 - 1.0

B = 1.1 - 3.0

C = 3.1 - 7.0

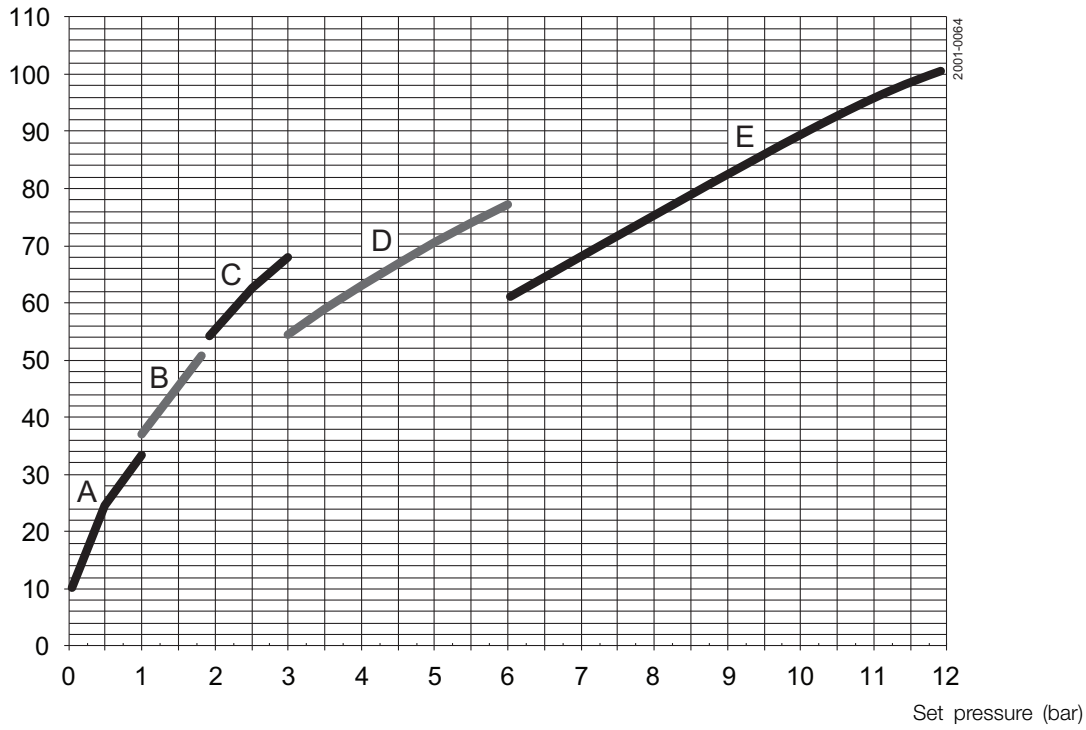
D = 7.1 - 12.0

Set pressure (bar)

Blow-off performance chart

DN 50 set pressure: 0.3 - 12.0 bar for liquids (water 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.3 - 0.9

B = 1.0 - 1.7

C = 1.8 - 2.9

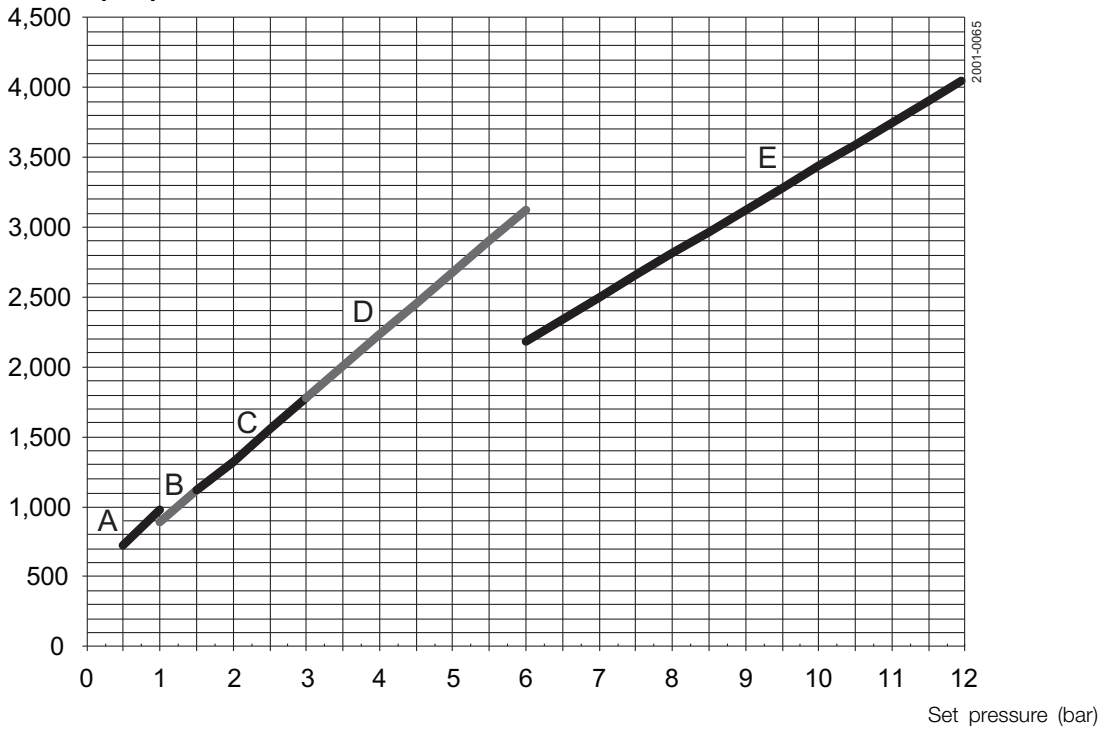
D = 3.0 - 6.0

E = 6.1 - 12.0

1.8

DN50 set pressure: 0.3 - 12.0 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.3 - 0.9

B = 1.0 - 1.7

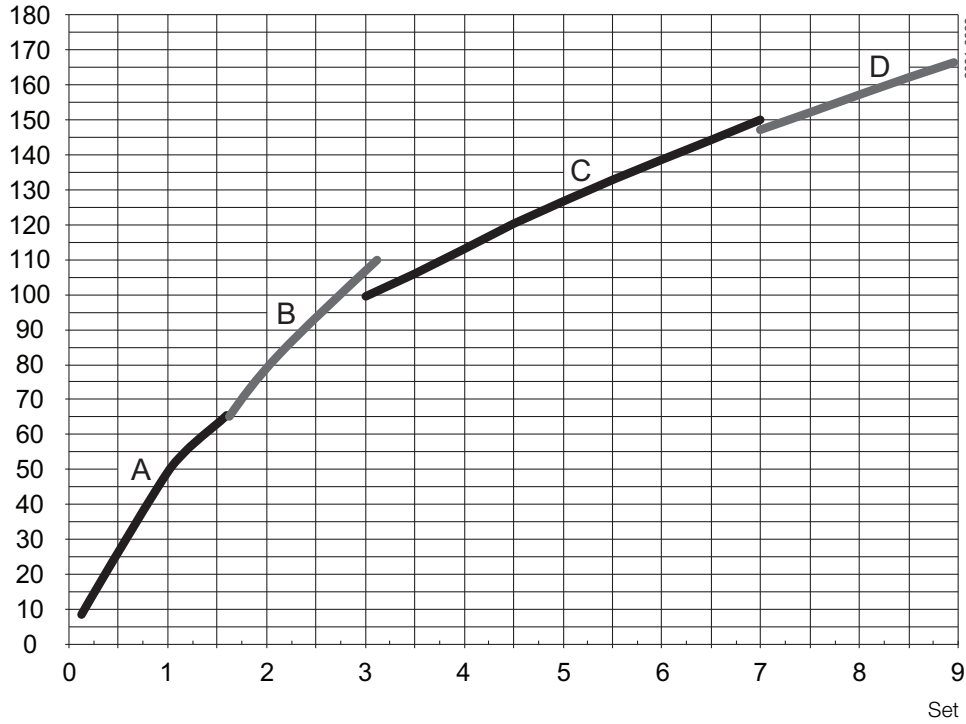
C = 1.8 - 2.9

D = 3.0 - 6.0

E = 6.1 - 12.0

DN65 set pressure: 0.4 - 9.0 bar for liquids (water 20 °C)

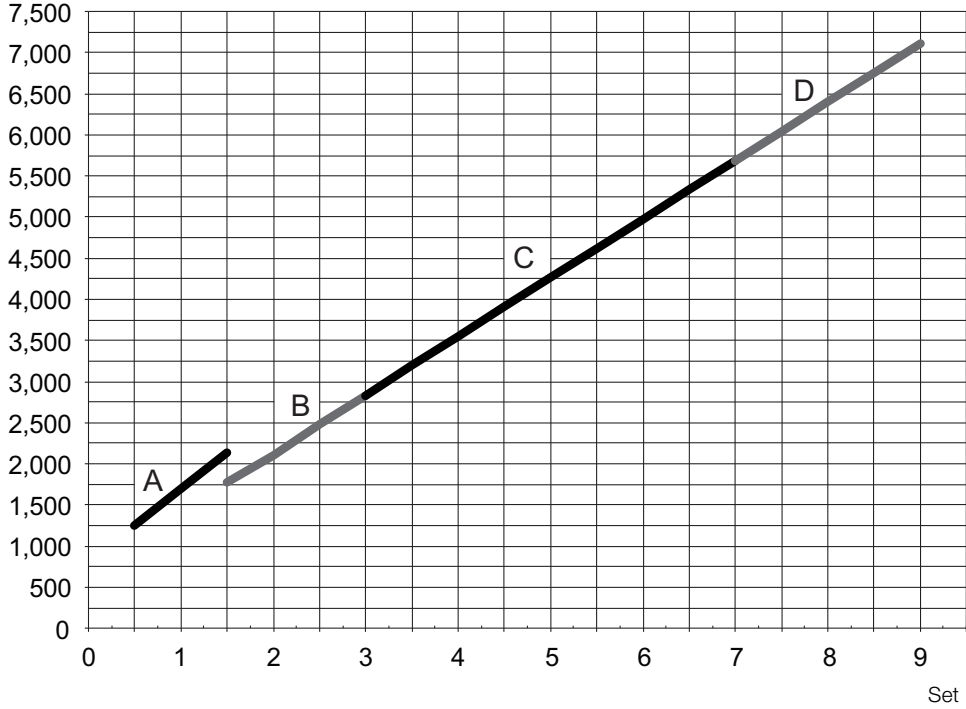
Flow rate [m<sup>3</sup>/h].



Pressure range [bar]  
 A = 0.4 - 1.5  
 B = 1.5 - 3.0  
 C = 3.1 - 7.0  
 D = 7.1 - 9.0

DN65 set pressure: 0.4 - 9.0 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].



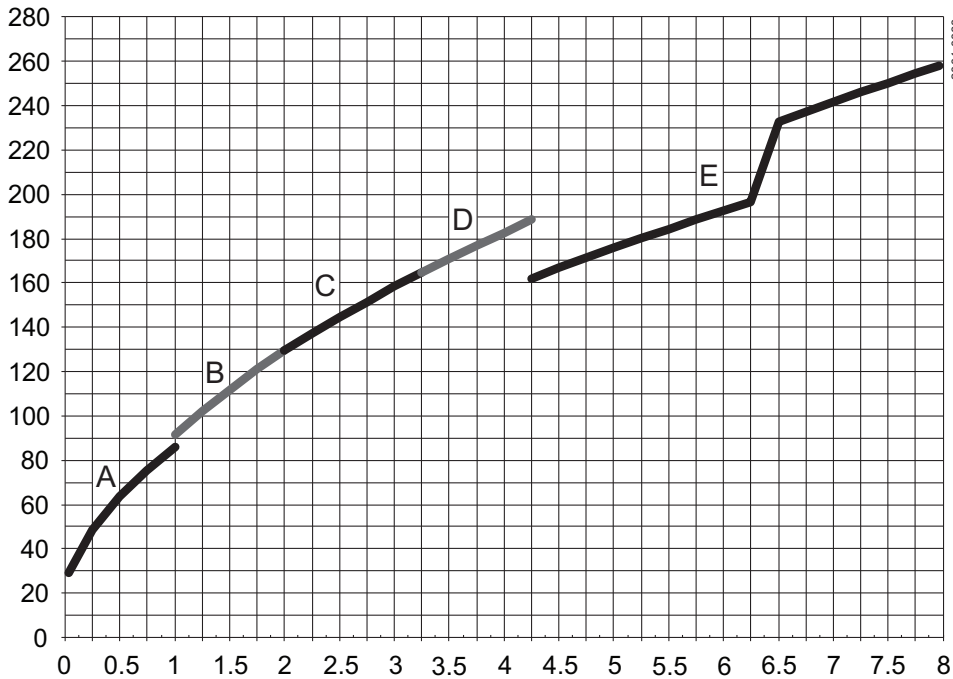
Pressure range [bar]  
 A = 0.4 - 1.5  
 B = 1.6 - 3.0  
 C = 3.1 - 7.0  
 D = 7.1 - 9.0



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DN80 set pressure: 0.3 - 8.0 bar for liquids (water 20 °C)

Flow rate [m<sup>3</sup>/h].

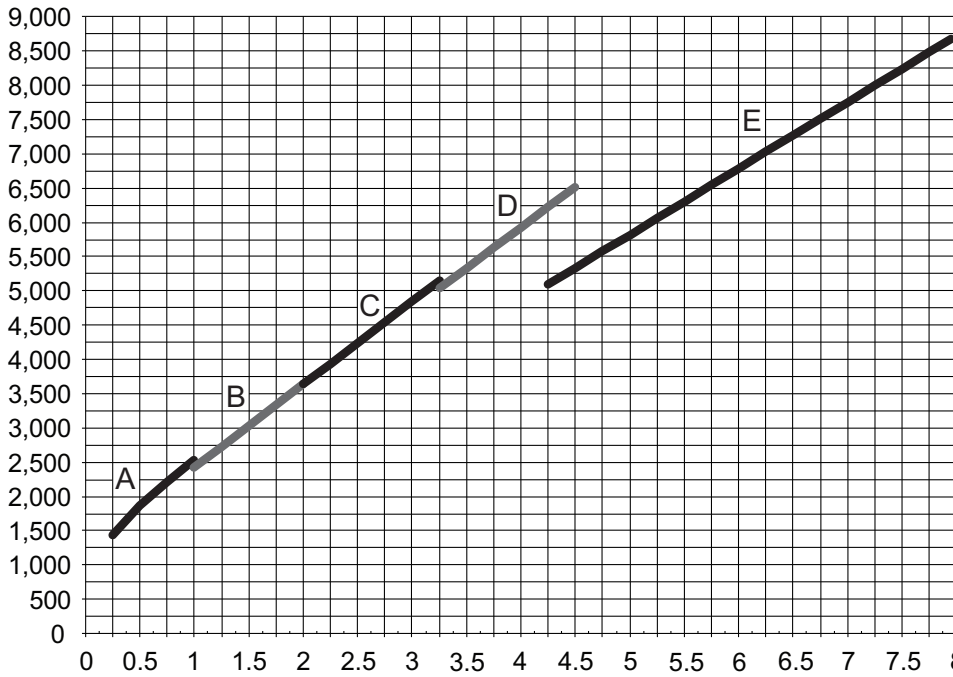


Pressure range [bar]

- A = 0.3 - 0.9
- B = 1.0 - 1.9
- C = 2.0 - 3.3
- D = 3.4 - 4.3
- E = 4.4 - 8.0

DN80 set pressure: 0.3 - 8.0 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].

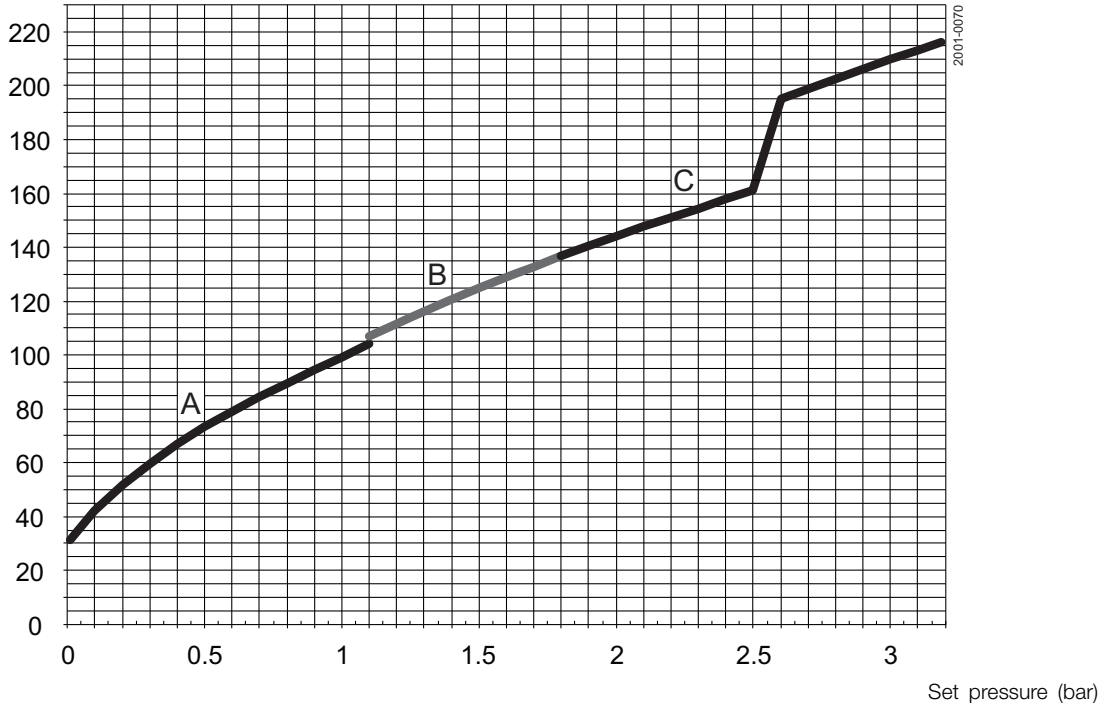


Pressure range [bar]

- A = 0.3 - 0.9
- B = 1.0 - 1.9
- C = 2.0 - 3.3
- D = 3.4 - 4.3
- E = 4.4 - 8.0

DN100 set pressure: 0.3 - 3.2 bar for liquids (water 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

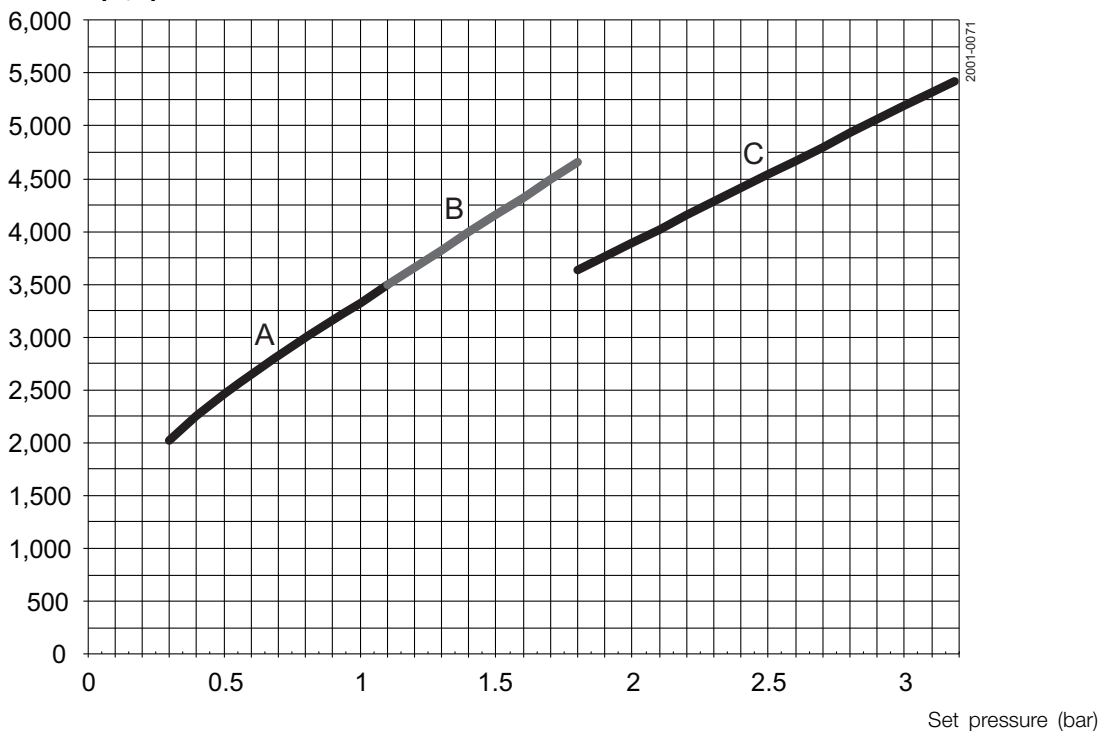
A = 0.3 - 1.1

B = 1.2 - 1.8

C = 1.9 - 3.2

DN100 set pressure: 0.3 - 3.2 bar for gases (air 20 °C)

Flow rate [m<sup>3</sup>/h].



Pressure range [bar]

A = 0.3 - 1.1

B = 1.2 - 1.8

C = 1.9 - 3.2