

→ Series 486

486

Pressure reducing valves
made of stainless steel



■ SUITABLE FOR

Steam	
Hot water	
Liquids	neutral and non-neutral
Air, gases and vapours	neutral and non-neutral

■ APPLICATIONS / EXAMPLES OF USE

Typical applications include:

Typische Einsatzgebiete umfassen:

- Steam generators
- Food and beverage industry
- Paper and packaging industry
- Autoclaves & sterilisation systems
- Pasteurisation
- Distillation
- Drying processes
- Laundries (dry cleaning); steaming of textiles; steam ironing stations

■ MATERIAL



■ SPECIFICATION



1/2" – 1 1/4"



+20°C to +200°C



Inlet pressure:
up to 16 bar
Outlet pressure:
1.5 to 10 bar
depending on the version

■ APPROVALS

FDA | Seals in contact with the medium comply with FDA regulations

EC No. 1935/2004 | Seals in contact with the medium comply with the regulation

BSE/TSE-free

■ MATERIALS

Component	Material	DIN EN
Inlet body	Stainless steel	1.4408
Outlet body	Stainless steel	1.4408
Internal parts	Stainless steel	1.4408
	Stainless steel	1.4404
Compression spring	Spring steel, rust-protected	1.4568

k	with piston	Stainless steel piston with seal. Pressure adjustment via non-rising Spindle Valve insert made entirely of stainless steel
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Complete SP/HP valve insert (order code: 486 insert-DN..-seal) available as a spare part and replaceable without removing the body.

■ MEDIA			
GF	gaseous and liquid	Hot water and steam	Non-hazardous, non-flammable neutral/non-neutral media

■ TYPE OF LIFTING MECHANISM	
0	without lifting device

■ BACK PRESSURE RANGES			
SP	Standard version	Inlet pressure: up to 16 bar	Outlet pressure: 1.5 to 5 bar
HP	High-pressure version	Inlet pressure: up to 16 bar	Outlet pressure: 4.5 to 10 bar

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES				
Nominal diameter DN	15	20	25	32
Inlet	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)
Outlet	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)

■ CONNECTION TYPE INLET / OUTLET THREADED CONNECTIONS			
BSP-Tm / BSP-Tm	Standard Threaded connections	Male thread BSP-T / Male thread BSP-T	DIN EN 10226, ISO 7-1 / DIN EN 10226, ISO 7-1
f / f	Version with female thread available in sizes DN 15, DN 20 and DN 25	Female thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1
NPT-f / NPT-f	Version with female thread available in sizes DN 15, DN 20 and DN 25	Female thread NPT-f / Female thread NPT-f	ANSI B1.20.1 / ANSI B1.20.1
FCD4A / FCD4A	Flange connection DIN EN 1092 pressure rating PN40 sealing strip form B / Flange connection DIN EN 1092 pressure rating PN40 sealing strip form B		

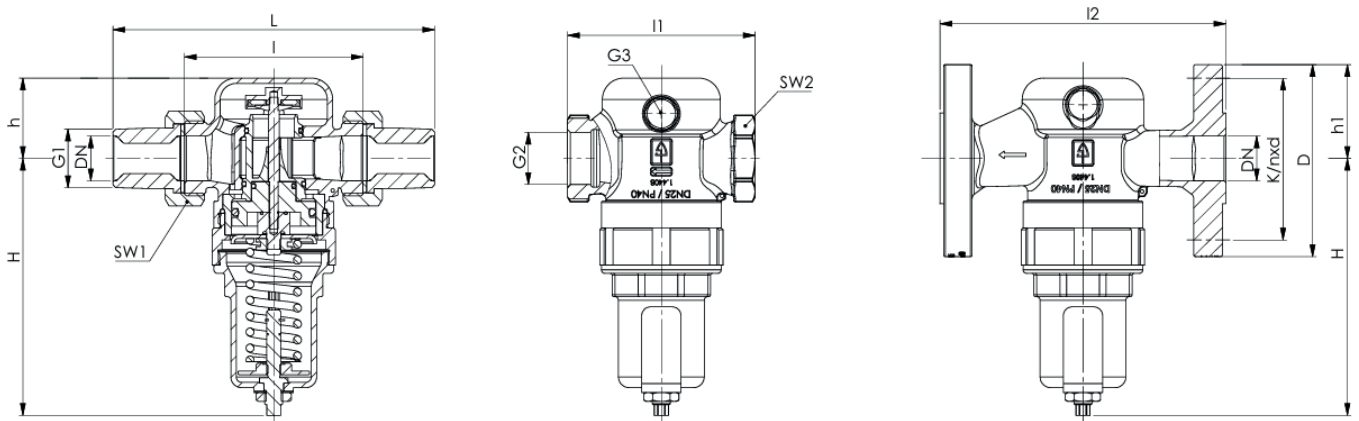
■ SEALS			
FEPM	Tetrafluoroethylene/propylene	Seals	+20°C to +200°C

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 486: Connections, installation dimensions, pressure ranges					
Nominal diameter	DN	15	20	25	32
Inlet / Outlet	G1	1/2"	3/4"	1"	1 1/4"
Inlet / Outlet	G2	1/2"	3/4"	1"	-
Inlet / Outlet	D	95	105	115	140
Inlet pressure SP, HP	bar	16	16	16	16
Outlet pressure	bar	1,5-5	1,5-5	1,5-5	1,5-5
Installation dimensions in mm		4,5-10	4,5-10	4,5-10	4,5-10
	L	142	158	180	193
	l	80	90	100	105
	l1	85	95	105	n.a.
	l2	130	150	160	180
	H	112	144	144	144
	h	33	33	45	45
	h1	46	50	55	68
	SW1	30	37	46	52
	SW2	28	35	43	48
	K / nxd	65/ 4xM12	75/ 4xM12	85/ 4xM12	100/ 4xM16
Pressure gauge connection outlet pressure	G3	1/4" axial	1/4" axial	1/4" axial	1/4" axial
Weight	kg	1,5	1,6	2,8	3
Weight (flange)		2,9	4,3	4,7	5,9
Flow coefficient Kvs	m³/h	3	3,2 (5,8¹)	6,7	7,6

¹for Type 486 with flange connections

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



Series 486 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve type	Medium	Lifting device	Back pressure range	Nominal diameter DN	Connection type		Connection size		Seal	Fixed setting (optional)	Quantity
						Inlet	Outlet	Inlet	Outlet			
486	K	GF	0	SP	25	BSP-T m	BSP-T m	25	25	FEPM		5
486	K	GF	0	SP	15	f	f	15	15	FEPM		4
486	K	GF	0									
486	K	GF	0									

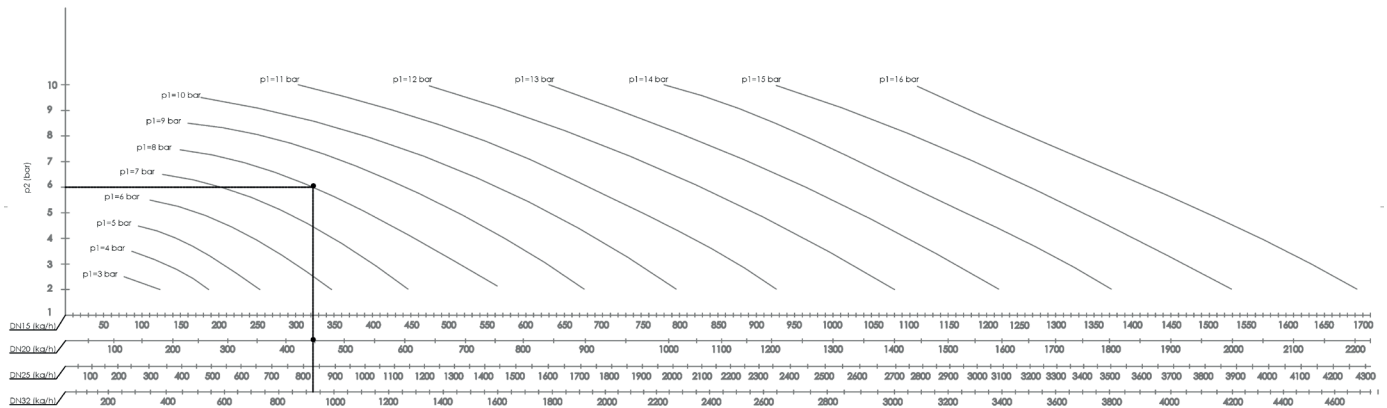
■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	☐
C02	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)	☐
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	☐

■ ENQUIRY

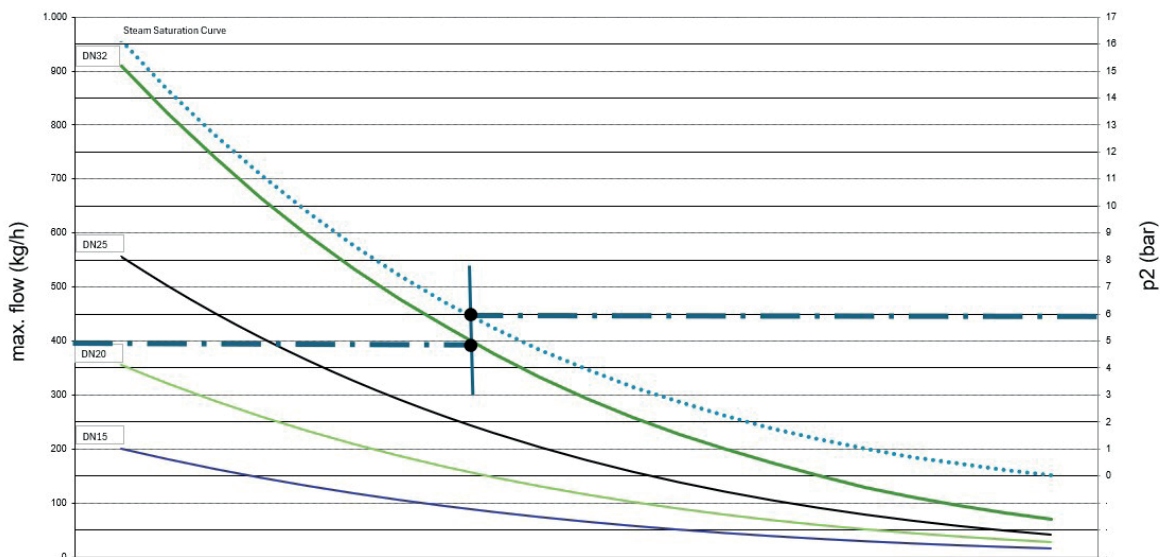
Copy and send to: order@goetze.de.

Step 1: Sizing of capacity



The selection of a suitable valve is based on an inlet pressure (p1) of 8 bar and an Outlet pressure (p2) of 6 bar. The application requires a saturated steam mass flow rate of 400 kg/h. When sizing for maximum flow, the operating data indicates that a valve with a nominal diameter of DN20 is sufficient, as the required capacity lies to the left of the line intersecting the scale.

Sizing Step 2: Max. flow velocity 40 m/s, saturated steam



Example:

For an Inlet pressure $p_1 = 8$ bar and an Outlet pressure $p_2 = 6$ bar, a suitable valve is to be selected based on the maximum recommended medium velocity of 40 m/s. The application requires a saturated steam mass flow rate of 400 kg/h.

Sizing based on maximum fluid velocity:

The evaluation of the entered parameters shows that a valve with a nominal diameter of **DN32** meets the requirements, as the valve's performance curve lies above the required mass flow rate.

Dimensioning by flow velocity

For Liquids:

With help of the chart you can determine the nominal diameter (DN) for a given flow volume V (m³/h). According to DVGW-guidelines (DIN 1988) a flow velocity of 2 m/s in domestic water supply systems should not be exceeded.

For compressed air and other gaseous media:

The usual flow velocity for compressed air is 10 - 20 m/s. For gaseous media the flow volume V should always be shown in actual cubic meters/hour. If the flow volume is given in standard cubic meters, these should be converted into actual cubic meters before using the diagram.

$$V(\text{m}^3/\text{h}) = \frac{V_{\text{Norm}}(\text{Nm}^3/\text{h})}{p_{\text{absolut}}(\text{bar})} = \frac{V_{\text{Norm}}}{p_v + 1}$$

Actual cubic meters are based on the prevailing pressure of the medium on the outlet side of the pressure reducer.

