→ Series 681

681

Pressure reducing valves made of gunmetal with threaded connections

SUITABLE FOR

Liquids	neutral and non-neutral
Air, gases and vapours	neutral and non-neutral
Potable water cold	up to 40°C
Potable water hot	up to 85°C

EXAMPLES OF USE

For the protection of:
- domestic water supply systems
- commercial and industrial plants

against too high supply pressure.
Pressure reducers are used, if within a piping system despite of varying pressures on the inlet side a certain pressure must not be exceeded on the outlet side.

- potable water supply according to DIN 1988
- process water supply in industrial-and building technology
- snow-making equipment
- fire-fighting equipment and sprinkler systems
- shipbuilding industry and offshore plants

APPROVALS

- **DIN-DVGW type examination (up to 80°C)**
- **Type approval ACS**
- **Type approval WRAS (up to 85°C)**
- **Type approval SINTEF**
- **Type approval PZH**
- **TR ZU 032/2013 - TR ZU 010/2011**

Requirements

DIN DVGW guidelines
DIN EN 1567
DIN 1988
DIN EN ISO 3822
DGR 2014/68/EU

Classification society

DNVGL	DNVGL
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV
Russian Maritime Register of Shipping	RMRS
Registro Italiano Navale	RINA

MATERIAL

SPECIFICATION

1/2" – 2"

–20°C to + 120°C

Inlet pressure: up to 40 bar
Outlet pressure: 0,5 to 15 bar
depending on version

MATERIALS

Component	Material	DIN EN	ASME
Inlet body	Gunmetal	CC499K	CC499K
Outlet body	Gunmetal	CC499K	CC499K
Internal parts	Gunmetal	CC499K	CC499K
	Stainless Steel	1.4404	316 L
Spring	Spring steel with anti-rust protection	1.1200	ASTM A228
Strainer	Stainless Steel	1.4404	316 L

Series 681 ■ VALVE VERSION

m	with diaphragm	High-quality, heat-resistant moulded elastomere, fabric-reinforced diaphragm. Adjustment by means of non-rising spindle. Insert with balanced single seat valve made of gunmetal.

Complete valve insert SP/HP (order code: 681 Insert-DN..-seal) available as replacement part can be exchanged without removing the valve.

Complete valve insert LP (order code: 681 LP Insert-DN..-seal) available as replacement part can be exchanged without removing the valve.

Built-in dirt trap made of stainless steel.

Mesh size:	DN 15 to DN 32	0,60 mm
	DN 40 and DN 50	0,75 mm

■ MEDIUM

GF	gaseous and liquid	for water, neutral and non-sticking liquids, compressed air and neutral gases; optionally with FPM elastomere seals for non-neutral media i.e. oils, fuels, oil-laden compressed air, etc. Not suitable with steam.

■ TYPE OF LIFTING MECHANISM

0	without lifting device

■ OUTLET PRESSURE RANGES

SP	Standard version	Inlet pressure: up to 40 bar	Outlet pressure: from 1 to 8 bar
HP	High-pressure version	Inlet pressure: up to 40 bar	Outlet pressure: from 5 to 15 bar
LP	Low-pressure version	Inlet pressure: up to 25 bar	Outlet pressure: from 0,5 to 2 bar

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN	**15**	**20**	**25**	**32**	**40**	**50**
Inlet	1/2“ (15)	3/4“ (20)	1“ (25)	1 1/4“ (32)	1 1/2“ (40)	2“ (50)
Outlet	1/2“ (15)	3/4“ (20)	1“ (25)	1 1/4“ (32)	1 1/2“ (40)	2“ (50)

■ TYPE OF CONNECTION 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 DN15, DN20 and DN25	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 DN15, DN20 and DN25	Female thread NPT-f / Female thread NPT-f	ANSI B1.20.1 / ANSI B1.20.1

■ SEALS

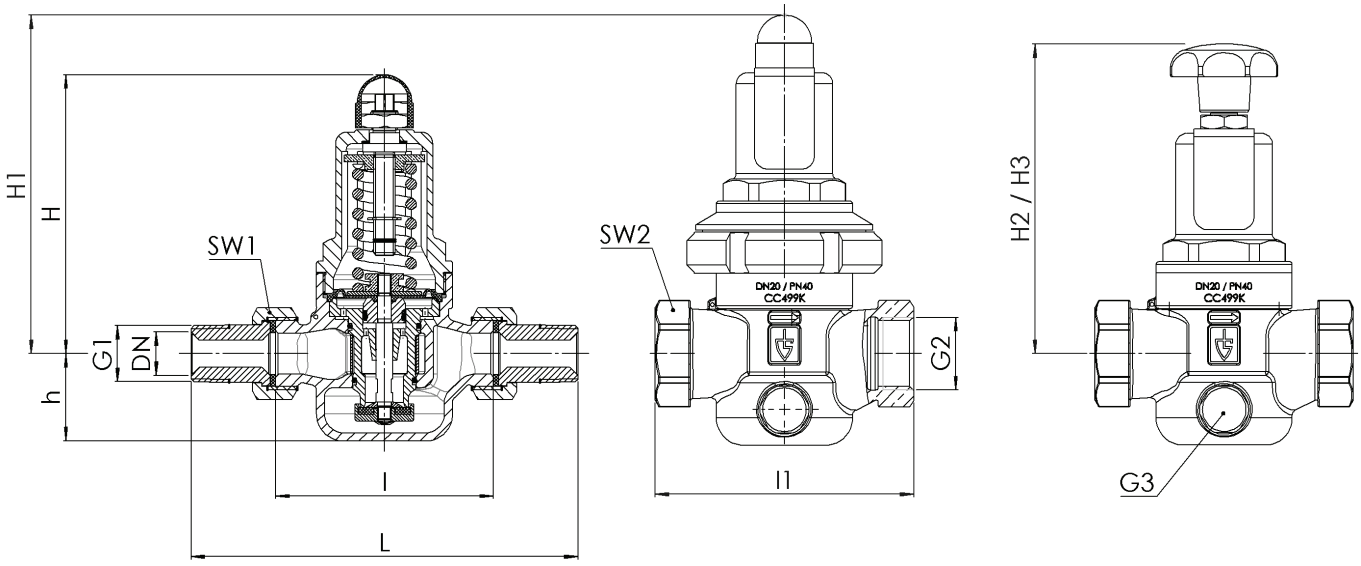
EPDM	Ethylene propylene diene	Elastomere moulded diaphragm and seals approvals according to drinking water directive	–20°C to +120°C (up to 8 bar outlet pressure) –20°C to +95°C (from 8 bar outlet pressure)
FKM	Fluorocarbon	Elastomere moulded diaphragm and seals	–10°C to +120°C (up to 8 bar outlet pressure) –10°C to +95°C (from 8 bar outlet pressure)

NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 681: Connection, installation dimensions, ranges of adjustment							
Connection	**DN**	**15**	**20**	**25**	**32**	**40**	**50**
Inlet DIN EN 10226	**G1**	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Outlet DIN EN 10226	**G2**	1/2"	3/4"	1"			
Inlet pressure SP, HP up to	**bar**	40	40	40	40	40	40
Inlet pressure LP up to	**bar**	25	25	25	25	25	25
Outlet pressure	**bar**	0,5 - 2	0,5 - 2	0,5 - 2	0,5 - 2	0,5 - 2	0,5 - 2
		1 - 8	1 - 8	1 - 8	1 - 8	1 - 8	1 - 8
		5 - 15	5 - 15	5 - 15	5 - 15	5 - 15	5 - 15
Installation dimensions in mm	**L**	142	158	180	193	226	252
	l	80	90	100	105	130	140
	l1	85	95	105			
	H (H1)	102 (128[1])	102 (128[1])	130 (150[1])	130 (150[1])	165 (185[1])	165 (185[1])
	H2 (H3)	124 (150[2])	124(150[2])	161 (181[2])	161 (181[2])	198 (218[2])	198 (218[2])
	h	33	33	45	45	70	70
	SW1	30	37	46	52	65	75
	SW2	28	35	43			
Pressure gauge connection Outlet pressure	**G3**	1/4" axial	1/4" axial	1/4" axial	1/4" axial	1/4" axial	1/4" axial
Weight	**kg**	1,2 (1,5[1])	1,3 (1,6[1])	2,4 (2,9[1])	2,6 (3,1[1])	5,5 (6,2[1])	6,0 (6,7[1])
Coefficient of flow K_{VS}[3]	**m³/h**	3	3,5	6,7	7,6	12,5	15

[1]for type 681mGFO-LP
[2]for type 681mGFO-LP S15
[3]The K_{VS} value was determined according to DIN EN 60534-2-3. Instructions on how to determine size and capacity are to be found under section 2.

MAIN DIMENSIONS, INSTALLATION DIMENSIONS



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Series 681 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve version	Medium	Lifting device	Outlet pressure	Nominal diameter DN	Connection type		Connection size		Seal	Options	Optional: fixed setting	Quantity
						Inlet	Outlet	Inlet	Outlet				
681	m	GF	0	*SP*	*20*	*BSP-T m*	*BSP-T m*	*20*	*20*	*EPDM*	*Manometer 36*		*8*
681	m	GF	0	*SP*	*15*	*f*	*f*	*15*	*15*	*EPDM*			*4*
681	m	GF	0										
681	m	GF	0										

■ PROPERTIES

S15	Hand wheel (plastic) for tool-free setting of setpressure[1]	☐			☐
S17	Supply with manometers suitable for the valve finish	☐			☐
S71	Preliminary setup for protection against manipulation of the preset pressure (seal)	☐			☐

[1]For nominal diameters DN15 to DN50 outlet pressure ranges LP and SP

■ OPTIONS

GOX	Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process	☐	**P03**	Galvanically nickel-plated finish	☐
P01	Oil- and grease-free production	☐	**FE**	Setting and sealing	☐
P02	Chemically nickel-plated finish	☐			☐

■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	☐	**C05**	Sealing material Manufacturer certification (FDA, USP 3, 3-A,…), Please indicate description of certificate:	☐
C02	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)	☐	**C06**	ATEX evaluation acc. to 2014/34/EU	☐
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	☐	**C10**	Certificate of oil- and grease free production	☐
C04	TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)	☐	**C11**	Certification of the production process especially for gaseous oxygen applications by employment of specific materials	☐

■ ADMISSIONS / ACCREDITATIONS

AA1	EC Type examination acc. to Directive 2014/68/EU	☒	**AK1**	DNV-GL (DNVGL) type approval	☐
AA4	EAC - certificate/declaration with passport for the valve and laser marking of the valve	☐	**AK2**	Lloyd's Register (LR) type approval	☐
AB1	Deutscher Verein des Gas- und Wasserfaches, DVGW type approval	☐	**AK3**	American Bureau of Shipping (ABS) type approval	☐
AB2	Water regulations and advisory scheme WRAS type approval	☐	**AK4**	Bureau Veritas (BV) type approval	☐
AB3	Attestation de Conformité Sanitaire, ACS type approval	☐	**AK5**	Russian Maritime Register of Shipping (RMRS) type approval	☐
AB4	Stiftelsen for industriell og teknisk forskning, SINTEF type approval	☐	**AK6**	Registro Italiano Navale (RINA) type approval	☐
		☐	**AL**	Individual inspection by notified body inspector – (body to be indicated):	☐

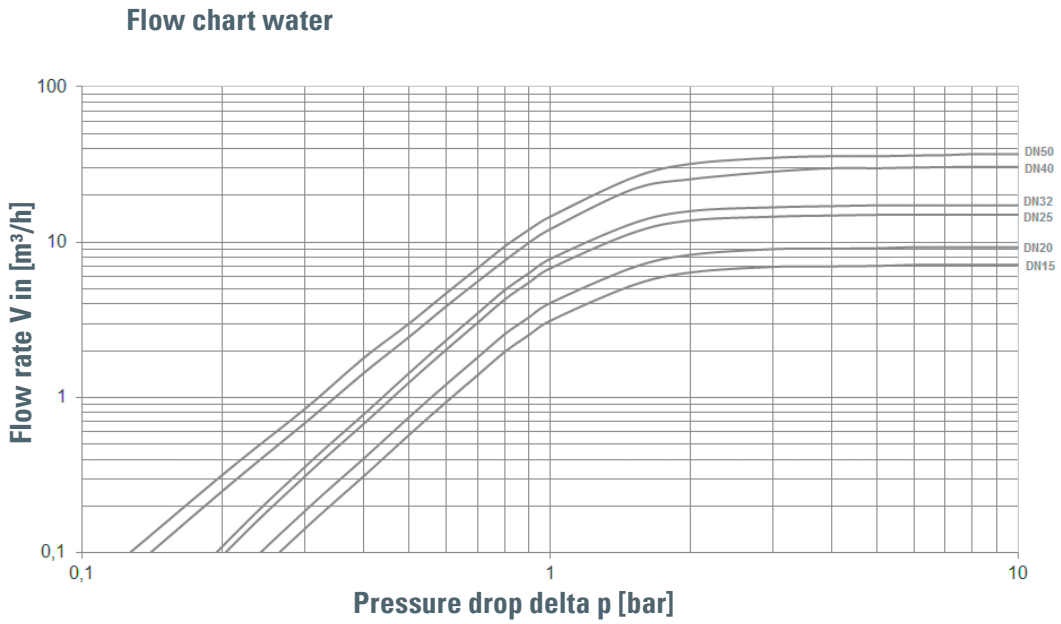
■ ENQUIRY

Copy and send to: order@goetze-armaturen.de.

Order form easily to be found online under the section for each series.

Series 681:

Dimensioning by pressure loss on the outlet pressure side



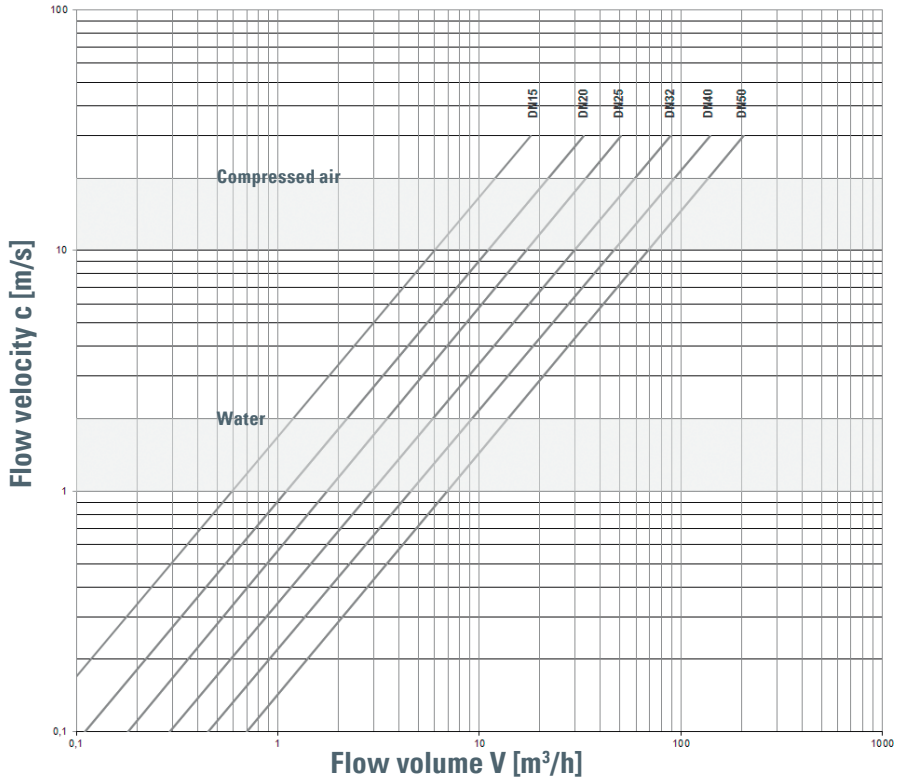
Dimensioning by flow velocity

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.

$$V\,(m^3/h) = \frac{V_{Norm}\ (Nm^3/h)}{p_{absolut}\ (bar)} = \frac{V_{Norm}}{p\ddot{u}+1}$$

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



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