

Overflow and pressure control valves made of stainless steel, angle-type with threaded connections – externally adjustable –

→ Series 453



■ SUITABLE FOR

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

■ EXAMPLES OF USE

For the protection of:

- pumps against overloading in closed circuits for neutral / non-neutral, non-sticking liquids

For the control of:

- systems under pressure for neutral/ non-neutral gases and vapours and – depending on the sealing material – also for steam

- chemical plants, biogas plants
- test rig construction
- mechanical engineering and process equipment construction
- shipbuilding industry and marine equipment
- desalination plants
- offshore applications
- secondary areas in the food-, beverage-, pharmaceutical- and cosmetics-industries



■ MATERIAL



■ SPECIFICATION



1/2" – 2"



– 60°C to + 260°C
depending on version



0,5 – 25 bar

■ APPROVALS

European Pressure Equipment Directive

TR ZU 032/2013 - TR ZU 010/2011

Requirements

PED 2014/68/EU

Classification society

DNV	DNV
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV
Russian Maritime Register of Shipping	RS

■ MATERIALS

Component	Material	DIN EN	ASME
Inlet body	Stainless steel	1.4404	316 L
Outlet body	Stainless steel	1.4408	CF8M
Internal parts	Stainless steel	1.4404	316 L
Bellows	Stainless steel	1.4571	316 Ti
Spring	Stainless steel	1.4310	302



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b	with bellows	for neutral and non-neutral media, counter pressure compensated up to 4 bar. Spring, moving parts and the environment are protected from being affected by the medium.
t	gastight version of spring housing	for neutral and non-neutral media without counter pressure. The environment is protected from being affected by the medium. Only available without lifting device and without hand wheel.
tb	gastight version with bellows	for neutral and non-neutral and particularly for flammable, toxic and environmentally hazardous media and/or counter pressure up to 4 bar. Spring, moving parts and the environment are protected from being affected by the medium. Double gastight. Only available without lifting device and without hand wheel.

Can be adjusted by hand wheel under operating conditions without medium escaping into the environment.

Valves can be delivered unset within a pressure range or set and sealed at the factory.

■ MEDIUM

GF	gaseous and liquid	Air, vapours, gases, liquids and - depending on safety valve version and seal - also for steam
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■ TYPE OF LIFTING MECHANISM

K	with twist-type lifting mechanism and sealing cap – not adjustable
0	without lifting device

■ 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)	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

f / f	Standard	Female thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1
m / f	On request	Male thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1
BSP-Tf / f		Female thread BSP-T / Female thread BSP-P	DIN EN 10226, ISO 7-1 / DIN EN ISO 228-1
BSP-Tm / f		Male thread BSP-T / Female thread BSP-P	DIN EN 10226, ISO 7-1 / DIN EN ISO 228-1

■ SEALS

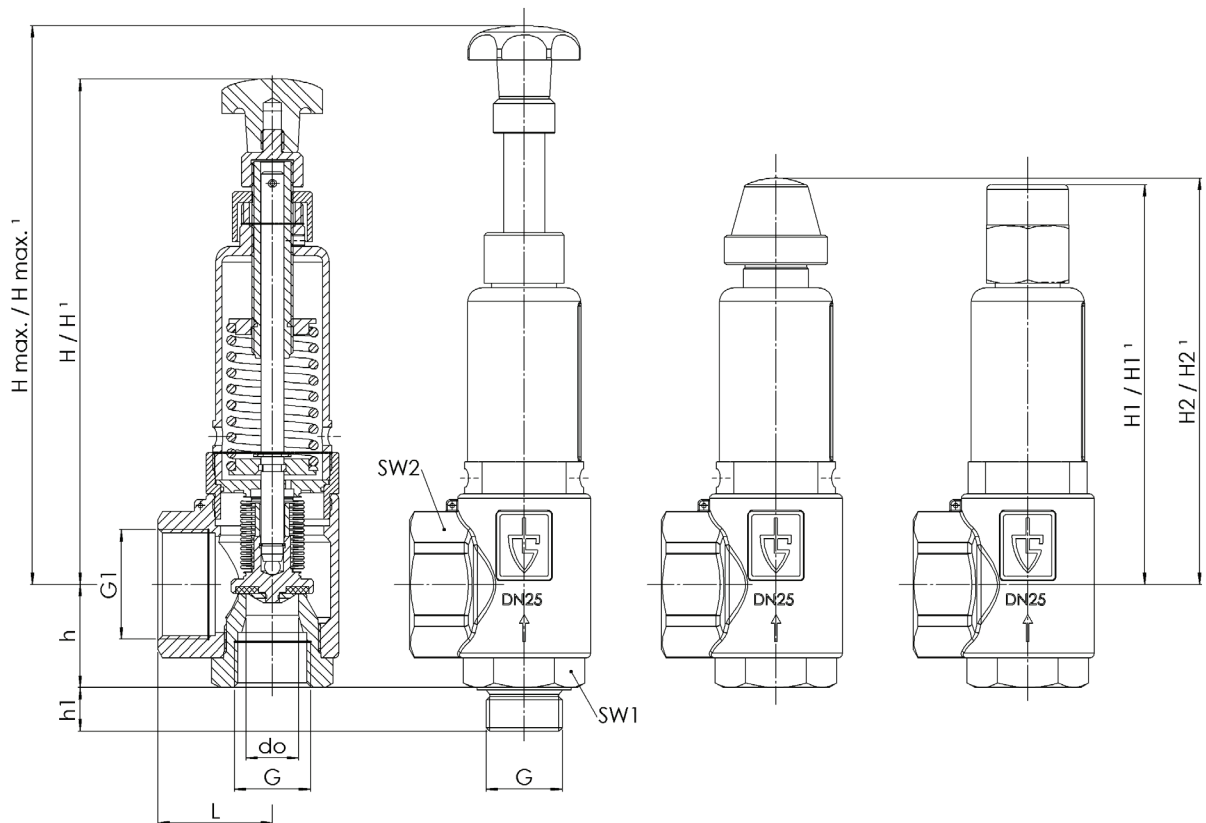
NBR	Nitrile rubber	Elastomere moulded seal with metallic support	-30°C to +130°C
EPDM	Ethylene propylene diene	Elastomere moulded seal with metallic support	-40°C to +170°C
FKM	Fluorocarbon	Elastomere moulded seal with metallic support	-20°C to +200°C
PTFE	Polytetrafluoroethylene	Flat seal	-60°C to +225°C
FFKM	Perfluorinated rubber	Elastomere moulded seal with metallic support	-10°C to +260°C

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 453: Connection, installation dimensions, ranges of adjustment							
Nominal diameter	DN	15	20	25	32		
Connection DIN EN ISO 228	G	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)
Outlet DIN EN ISO 228	G1	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)	2" (50)	2" (50)
Installation dimensions in mm	L	40	43	50	61	61	61
	H / H ¹	102 / 102	156 / 169,5	205 / 223	296 / 318	296 / 318	296 / 318
	H max. / H max. ¹	120 / 120	177 / 190,5	230 / 248,5	320 / 344	320 / 344	320 / 344
	H1 / H1 ¹	76 / 76	139 / 152,5	175 / 193	241 / 263	241 / 263	241 / 263
	H2 / H2 ¹	77 / 77	138 / 151,5	177 / 195	241 / 263	263 / 285	263 / 285
	h	30	39	45	55	69	74
	h1	16	14	19	21	22,5	25,0
	SW1	30	36	46	55	55	70
	SW2	40	50	58	70	70	70
	do	16	18	23	30	30	30
Weight	kg	0,5	1,0	2,0	4,2	4,5	4,7
Set pressure	bar	0,5 - 25	0,5 - 25	0,5 - 25	0,5 - 25	0,5 - 25	0,5 - 25
Range of adjustment	bar	0,5-0,9	0,5-1	0,5-0,9	0,5-0,9	0,5-0,9	0,5-0,9
		1-1,3	1-1,6	0,9-1,5	1-1,3	1-1,3	1-1,3
		1,3-2,9	1,6-2,8	1,5-2	1,4-3	1,4-3	1,4-3
		2,9-3,9	2,8-5,3	2,1-4,5	3,1-5,5	3,1-5,5	3,1-5,5
		3,9-7,9	5,4-10	4,6-8	5,6-11	5,6-11	5,6-11
		8-11,5	10-12	8,1-14	11-16	11-16	11-16
		11-16	12-25	14-25	16-25	16-25	16-25

¹Dimension for the version with bellows

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



Series 453 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve version	Medium	Lifting device	Nominal diameter DN	Connection type		Connection size		Seal	Options	Set pressure	Quantity
					Inlet	Outlet	Inlet	Outlet				
453	<i>b</i>	GF	<i>O</i>	25	<i>m</i>	<i>f</i>	25	40	FKM		7,5	2
453	<i>b</i>	GF	<i>K</i>	32	<i>f</i>	<i>f</i>	40	50	FFKM		3,1 - 5,5	1
453												
453												

■ PROPERTIES

GOX	Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process	<input type="checkbox"/>	<input type="checkbox"/>
P01	Oil- and grease-free production	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	<input type="checkbox"/>	C06	ATEX evaluation acc. to 2014/34/EU	<input type="checkbox"/>
C02-1	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1) for non TÜV-CE valves marking of individual serial number is required	<input type="checkbox"/>	C10	Certificate of oil- and grease free production	<input type="checkbox"/>
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	<input type="checkbox"/>	C11	Certification of the production process especially for gaseous oxygen applications by employment of specific materials	<input type="checkbox"/>
C05	Sealing material Manufacturer certification (FDA, USP 3, 3-A,...), Please indicate description of certificate: _____	<input type="checkbox"/>			<input type="checkbox"/>

■ ADMISSIONS / ACCREDITATIONS

AA1	EC Type examination acc. to Directive 2014/68/EU	<input type="checkbox"/>	AK1	Det Norske Veritas (DNV) type approval	<input type="checkbox"/>
AA4	EAC - certificate/declaration with passport for the valve and laser marking of the valve	<input type="checkbox"/>	AK2	Lloyd's Register (LR) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK3	American Bureau of Shipping (ABS) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK4	Bureau Veritas (BV) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK5	Russian Maritime Register of Shipping (RMRS) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AK6	Registro Italiano Navale (RINA) type approval	<input type="checkbox"/>
		<input type="checkbox"/>	AL	Individual inspection by notified body inspector – (body to be indicated): _____	<input type="checkbox"/>

■ ENQUIRY

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

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

■ CAPACITY TABLE

Series 453: Kv values at 1 bar overpressure													
Nominal diameter DN	15				15				15				
	Air [Nm ³ /h]				Water [m ³ /h]				Steam [kg/h]				
Pressure range bar	0,5 - 0,9	1,3 - 2,9	3,9 - 7,9	11 - 16	0,5 - 0,9	1,3 - 2,9	3,9 - 7,9	11 - 16	0,5 - 0,9	1,3 - 2,9	3,9 - 7,9	11 - 16	
	1 - 1,3	2,9 - 3,9	8 - 11,5	16 - 25	1 - 1,3	2,9 - 3,9	8 - 11,5	16 - 25	1 - 1,3	2,9 - 3,9	8 - 11,5	16 - 25	
Set pressure bar													
0,5	120				4,4				97				
0,7	135				4,6				110				
0,9	150				5				127				
1,0	105				4,8				81				
1,1	116				4,9				94				
1,3	133	124			5,2	4,1			106	96			
2,1	134				4,4				85				
2,9	148		120			5,2	5,1			111	96		
3,4	139				5,2				106				
3,9	154		86			5,3	3,1			121	67		
5,9	106				3,7				81				
7,9	135				3,9				100				
8,0	142				3,6				101				
9,7	140				2,7				118				
11,0	138		28			2,4	2,2			111	26		
11,5	137		39			2,3	2,1			109	32		
13,5	73				1,7				47				
16,0	96		67			1,2	1,4			72	54		
20,5	125				1,3				90				
25,0	184				1,1				134				

Kv values at 1 bar overpressure													
Nominal diameter DN	20				20				20				
	Air [Nm ³ /h]				Water [m ³ /h]				Steam [kg/h]				
Pressure range bar	0,5 - 1	1,6 - 2,8	5,4 - 10	12 - 25	0,5 - 1	1,6 - 2,8	5,4 - 10	12 - 25	0,5 - 1	1,6 - 2,8	5,4 - 10	12 - 25	
	1 - 1,6	2,8 - 5,3	10 - 12		1 - 1,6	2,8 - 5,3	10 - 12		1 - 1,6	2,8 - 5,3	10 - 12		
Set pressure bar													
0,5	275				8,6				214				
0,7	295				9,1				227				
1,0	327	309			9,6	9,2			256	240			
1,3	344				9,5				267				
1,6	368	333			10	8,8			281	262			
2,2	379				9,5				293				
2,8	428		365			10,4	8,3			327	282		
4,1	482				9,6				357				
5,3	541				10,2				416				
5,4	420				7,9				323				
7,7	562				10,7				434				
10,0	685		497			14,3	11			518	393		
11,0	526				11,6				374				
12,0	558		326			11,8	5,3			420	238		
18,5	423				3,1				319				
25,0	606				1,6				453				



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■ CAPACITY TABLE

Series 453: Kv values at 1 bar overpressure												
Nominal diameter DN	25				25				25			
	Air [Nm ³ /h]				Water [m ³ /h]				Steam [kg/h]			
Pressure range	0,5 - 0,9	1,5 - 2	4,6 - 8	14 - 25	0,9 - 1,5	2,1 - 4,5	8,1 - 14	14 - 25	0,5 - 0,9	1,5 - 2	4,6 - 8	14 - 25
bar	0,9 - 1,5	2,1 - 4,5	8,1 - 14	0,5 - 0,9	1,5 - 2	4,6 - 8	14 - 25	0,9 - 1,5	2,1 - 4,5	8,1 - 14		
Set pressure bar												
0,5	503				13,6				393			
0,7	543				14,3				424			
0,9	592	586			15,1	14,6			462	455		
1,2		655				15,1				508		
1,5		726	697			15,8	14,9			562	539	
1,8			783				15,7				592	
2,0			836				16,3				631	
2,1			748				15,3				584	
3,3			985				17,5				751	
4,5			1221				19,8				931	
4,6				784				15,6				601
6,3				1097				18,1				823
8,0				1514				21,7				1138
8,1					1208				17,7			904
11,1					1553				22,3			1146
14,0					2090	805			22,7	13,8		1564 612
19,5						1107				15,2		818
25,0						1179				17,2		854

Kv values at 1 bar overpressure												
Nominal diameter DN	32				32				32			
	Air [Nm ³ /h]				Water [m ³ /h]				Steam [kg/h]			
Pressure range	0,5 - 0,9	1,4 - 3	5,6 - 11	16 - 25	1 - 1,3	3,1 - 5,5	11 - 16	16 - 25	0,5 - 0,9	1,4 - 3	5,6 - 11	16 - 25
bar	1 - 1,3	3,1 - 5,5	11 - 16	0,5 - 0,9	1,4 - 3	5,6 - 11	16 - 25	1 - 1,3	3,1 - 5,5	11 - 16		
Set pressure bar												
0,5	844				23,3				660			
0,7	915				24,8				712			
0,9	986				26,1				775			
1,0		1009				26,9				711		
1,1		1066				28,1				734		
1,3		1123				28,8				792		
1,4			1183				27,4				827	
2,2			1402				30,0				986	
3,0			1665				32,0				1150	
3,1				1409				26,5				984
4,3				1695				28,0				1187
5,5				1842				31,1				1269
5,6					1322				24,3			922
8,3					1893				28,7			1267
11,0					2496	1918			36,4	27,8		1698 1321
13,5						2175				34,6		1458
16,0						2595	1248			35,6	18,2	1686 843
20,5							2155				29,9	1374
25,0							2332				36,8	1550