→ Series 453

453

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



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

Rostfrei

SPECIFICATION

1/2“ – 2“	– 60°C to + 225°C depending on version	0,5 – 25 bar

APPROVALS

European Pressure Equipment Directive

GOST-R

Requirements

PED 97/23/EC

Classification society

Germanischer Lloyd	GL
Lloyd's Register EMEA	LR EMEA
American Bureau of Shipping	ABS
Bureau Veritas	BV

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

VALVE VERSION

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.

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

TYPE OF LIFTING MECHANISM

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
Against surcharge			
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

Further connection types available on request.

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
Against surcharge			
FFKM	Perfluorinated rubber	Elastomere moulded seal with metallic support	–10°C to +260°C

OPTIONS

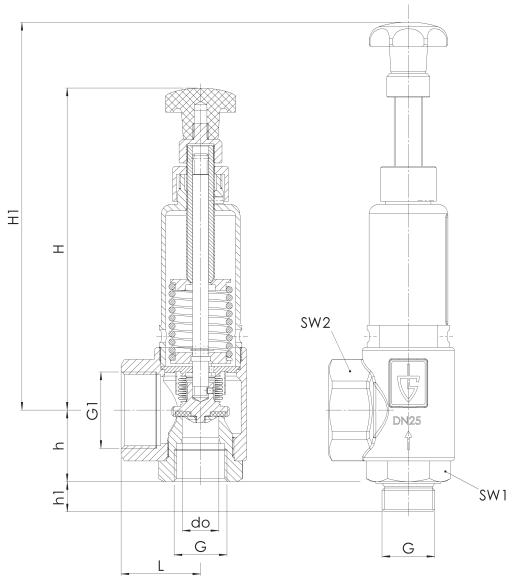
Special versions on request.

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	102	156	205	296	296	296
	H1	120	177	230	320	320	320
	h	30	39	45	55	61	64
	h1	16	14	19	21	22	20
	SW1	30	36	46	55	55	55
	SW2	40	50	58	70	70	70
	do	16	18	23	30	30	30
Weight	kg	0,4	1,0	2,0	4,0	4,2	4,4
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 1-1,3 1,3-2,9 2,9-3,9 3,9-7,9 8-11,5 11-16 16-25	0,5-1 1-1,6 1,6-2,8 2,8-5,3 5,4-10 10-12 12-25	0,5-0,9 0,9-1,5 1,5-2 2,1-4,5 4,6-8 8,1-14 14-25	0,5-0,9 1-1,3 1,4-3 3,1-5,5 5,6-11 11-16 16-25	0,5-0,9 1-1,3 1,4-3 3,1-5,5 5,6-11 11-16 16-25	0,5-0,9 1-1,3 1,4-3 3,1-5,5 5,6-11 11-16 16-25

MAIN DIMENSIONS, INSTALLATION DIMENSIONS



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	b	GF	0	*25*	*m*	*f*	*25*	*40*	*FKM*		*7,5*	*2*
453	b	GF	0	*32*	*f*	*f*	*40*	*50*	*FFKM*		*3,1 - 5,5*	*1*
453	b	GF	0									
453	b	GF	0									

In this table you can configure a valve according to your individual requirements (similar to the *example* shown, which should be deleted before you enter your own data). Please complete the table by hand using the abbreviations in this datasheet and then fax it to: +49(0)7141.4889488
Please do not forget to add your personal data so that our sales team can contact you.

Name

First Name

Company

Telephone

E-Mail

Series 453: Kv values at 1 bar overpressure

Nominal diameter DN	15 Air [Nm³/h]								15 Water [m³/h]								15 Steam [kg/h]							
Pressure range bar	0,5 - 0,9	1 - 1,3	1,3 - 2,9	2,9 - 3,9	3,9 - 7,9	8 - 11,5	11 - 16	16 - 25	0,5 - 0,9	1 - 1,3	1,3 - 2,9	2,9 - 3,9	3,9 - 7,9	8 - 11,5	11 - 16	16 - 25	0,5 - 0,9	1 - 1,3	1,3 - 2,9	2,9 - 3,9	3,9 - 7,9	8 - 11,5	11 - 16	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 Air [Nm³/h]							20 Water [m³/h]							20 Steam [kg/h]						
Pressure range bar	0,5 - 1	1 - 1,6	1,6 - 2,8	2,8 - 5,3	5,4 - 10	10 - 12	12 - 25	0,5 - 1	1 - 1,6	1,6 - 2,8	2,8 - 5,3	5,4 - 10	10 - 12	12 - 25	0,5 - 1	1 - 1,6	1,6 - 2,8	2,8 - 5,3	5,4 - 10	10 - 12	12 - 25
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

Series 453: Kv values at 1 bar overpressure

Nominal diameter DN	25 Air [Nm³/h]							25 Water [m³/h]							25 Steam [kg/h]						
Pressure range bar	0,5 - 0,9	0,9 - 1,5	1,5 - 2	2,1 - 4,5	4,6 - 8	8,1 - 14	14 - 25	0,5 - 0,9	0,9 - 1,5	1,5 - 2	2,1 - 4,5	4,6 - 8	8,1 - 14	14 - 25	0,5 - 0,9	0,9 - 1,5	1,5 - 2	2,1 - 4,5	4,6 - 8	8,1 - 14	14 - 25
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 Air [Nm³/h]							32 Water [m³/h]							32 Steam [kg/h]						
Pressure range bar	0,5 - 0,9	1 - 1,3	1,4 - 3	3,1 - 5,5	5,6 - 11	11 - 16	16 - 25	0,5 - 0,9	1 - 1,3	1,4 - 3	3,1 - 5,5	5,6 - 11	11 - 16	16 - 25	0,5 - 0,9	1 - 1,3	1,4 - 3	3,1 - 5,5	5,6 - 11	11 - 16	16 - 25
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