→ Series 4450

4450

Safety valves made of stainless steel, angle-type with threaded connections



CE 0035 UKCA 0168 ASME UV CRN

MATERIAL

SPECIFICATION

1/2“ – 1“	– 50°C to + 205°C depending on version	0,5 – 16 bar

SUITABLE FOR

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

EXAMPLES OF USE

For the protection of:
- Pressure-vessels/-systems for neutral / non-neutral vapours, gases and liquids
- Steam boilers and steam plants

taking into account the plant-specific regulations and making use of the suitable valve versions and sealing materials.

- Mechanical engineering
- Cooling/refrigeration systems
- Chemical plants, biogas plants
- Desalination plants
- Apparatus engineering and medical technology
- Shipbuilding and ship equipment
- Secondary sectors of the food, beverage, pharmaceutical and cosmetics industries

Safety valves are set and sealed at the factory.

APPROVALS

TÜV Type test approval 2102	**D/G,F (from mid 2024)**
EU type examination	**S/G, L (from mid 2024)**
ASME	**S, G, L (from mid 2024)**
CRN	**S, G, L (from mid 2024)**
Requirements AD 2000 Data sheet A2 DIN EN ISO 4126-1 PED 2014/68/EU UK PESR 2016 No. 1105	ASME-Code Sec. VIII Div. 1

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	1.4408 / 1.4404	CF8M / 316L
Internal wetted parts	Stainless steel	1.4404	316 L
Spring	Stainless steel	1.4310 / 1.4568	302 / 631

Series 4420 ■ VALVE VERSION

m	Standard with diaphragm	The diaphragm prevents the medium entering into the spring housing and protects moving parts from being affected by the medium.

■ MEDIUM

GF	gaseous and liquid	Air, vapours, gases, liquids and - depending on seal - also for steam

■ TYPE OF LIFTING MECHANISM

L	Lifting lever
0	without lifting device

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN		**15**	**20**	**25**
Inlet		1/2“ (15)	3/4“ (20)	1“ (25)
Outlet	3/4“ (20)	■		
	1“ (25)		■	
	11/4“ (32)			■

■ TYPE OF CONNECTION INLET / OUTLET

f / f	Standard	Female thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1	
m/ f		Male thread BSP-P / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1	
NPT-f / NPT-f		Female thread NPT-f / Female thread NPT-f	ANSI B1.20.1 / ANSI B1.20.1	
NPT-m / NPT-f		Male thread NPT-m / Female thread NPT-f	ANSI B1.20.1 / ANSI B1.20.1	
KLSISO/f		Clamp connection / Female thread BSP-P	DIN 32676-B / DIN EN ISO 228-1	Pipe Standard DIN EN ISO 1127

Other connection types possible on request

■ SEAT SEALS / DIAPHRAGMS

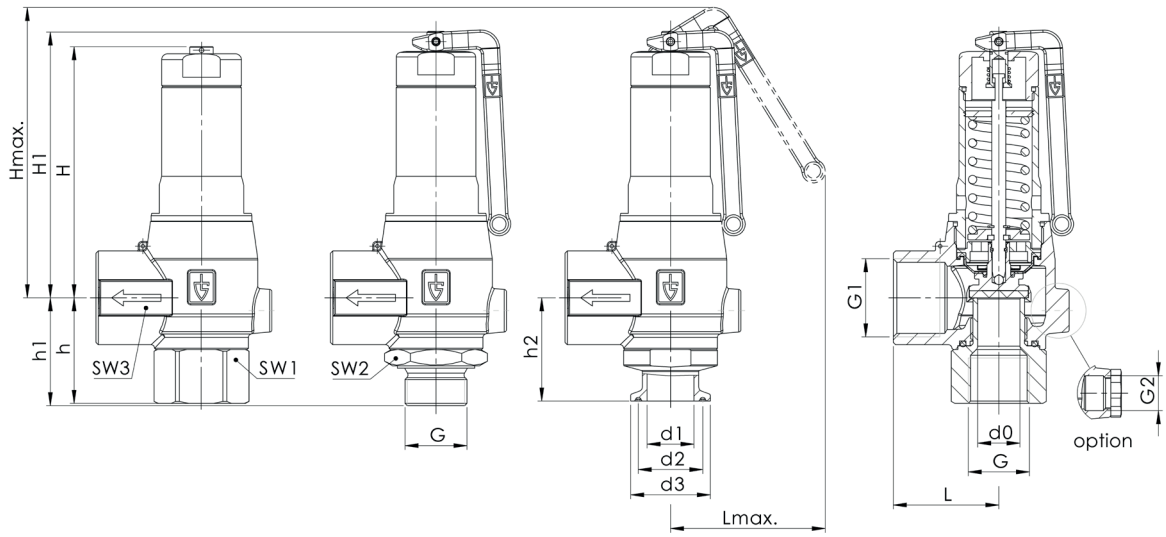
PTFE / EPDM	Polytetrafluorethylen / Ethylen-Propylene-Diene (Standard)	Flat seal and moulded diaphragm	–50°C to +205°C
EPDM / EPDM	Ethylen-Propylene-Diene / Ethylen-Propylene-Diene	Flat seal and moulded diaphragm	–50°C bis +150°C
PTFE / FKM	Polytetrafluorethylen / Fluorcarbon	Flat seal and moulded diaphragm	–30°C to +200°C
FKM / FKM	Fluorcarbon / Fluorcarbon	Flat seal and moulded diaphragm	–20°C to +200°C

NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 4450: Connection, installation dimensions, ranges of adjustment				
Nominal diameter	**DN**	**15**	**20**	**25**
Connection DIN EN ISO 228	**G**	1/2" (15)	3/4" (20)	1 " (25)
Outlet DIN EN ISO 228	**G1**	3/4" (20)	1 " (25)	1 1/4" (32)
Installation dimensions in mm	**L**	35,5	45	48
	Lmax	63	77	102
	H	82	107	132
	H1	95	119	148
	Hmax	107	137	168
	h	35	45	47
	h1	35	46	53
	h2	34	44	51
	d1	18,1	23,7	29,7
	d2	43,5	43,5	43,5
	d3	50,5	50,5	50,5
	SW1	30	36	50
	SW2	30	38	50
	SW3	34	41	50
	do	13	18	23
	G2	-	1/4"	1/4"
	αw /Kdr (F)	0,45	0,43	0,43
	αw /Kdr (D/G)[1]	0,64	0,63	0,63
Weight	**kg**	0,6	1,1	1,9
Range of adjustment	**bar**	0,5 - 16	0,5 - 16	0,5 - 16

[1] Discharge figures for blow-off pressures > 3.0 bar. For lower pressures, see details in the capacity table.

MAIN DIMENSIONS, INSTALLATION DIMENSIONS



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Series 4450 ■ 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				
4450	m	GF	L	*15*	*f*	f	*15*	*20*	*PTFE / EPDM*		*6*	*2*
4450	m	GF	O	*25*	*m*	f	*25*	*32*	*FKM / FKM*		*2*	*4*
4450	m	GF				f						
4450	m	GF				f						

■ TECHNICAL FINISHES, VARIANTS, ACCESSORIES

A02	Connection for condensate in the outlet body	☐
		☐
		☐

■ PROPERTIES

P01	Oil- and grease-free production	☐		☐
		☐		☐

■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	☐	**C06**	ATEX evaluation acc. to 2014/34/EU	☐
C02	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)	☐	**C07**	SIL evaluation relating to IEC 61508-2	☐
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	☐	**C09**	Seat tightness test with helium, leak detection method under vacuum incl. Factory Inspection Certificate 3.1 acc. to DIN EN 10204	☐
C04	TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)	☐	**C10**	Certificate of oil- and grease free production	☐
C05	Sealing material Manufacturer certification (FDA, USP 3, 3-A,…), Please indicate description of certificate:	☐			☐

■ ADMISSIONS / ACCREDITATIONS

AA1	EC Type examination acc. to Directive 2014/68/EU	☐	**AK1**	Det Norske Veritas (DNV) type approval	☐
AA2	TÜV component test acc. to VdTÜV specification sheet SV 100	☐	**AL**	Individual inspection by notified body inspector – (body to be indicated):	☐
AA3	Certification acc. to ASME Boiler and Pressure Vessel Code, Section VIII.Div 1 (ASME)	☐			☐
AA6	Certification acc. to. Korean Gas Safety Corporation (KGS)	☐			☐
AA7	Registration according to Canadian Registration Number (CRN)	☐			☐
AA11	UK Type examination acc. to Directive UK PESR 2016 No. 1105	☐			☐

■ ENQUIRY

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■ CAPACITY TABLE ACC. TO ISO 4126-1 / AD2000 A2

Series 4450: Blowing-off rates at 10% above set pressure

Nominal diameter DN		15			20			25		
Set pressure bar		I	II	III	I	II	III	I	II	III
Air I	0,5	76	62	2,3	143	117	4,3	234	191	7,0
Nm³/h	1	110	88	3,2	207	165	5,8	338	269	9,5
	2	180	142	4,5	340	268	8,2	556	437	13,5
Steam II	3	248	193	5,5	468	365	10,1	764	595	16,5
kg/h	4	312	242	6,4	592	458	11,7	966	748	19,1
	5	376	290	7,1	712	549	13,1	1163	896	21,3
Water III	6	440	337	7,8	833	639	14,3	1359	1043	23,4
m³/h	7	503	385	8,4	953	729	15,5	1556	1190	25,2
	8	567	432	9,0	1074	819	16,5	1753	1337	27,0
	9	631	480	9,6	1194	908	17,5	1950	1483	28,6
	10	694	527	10,1	1315	998	18,5	2147	1629	30,2
	11	758	574	10,6	1435	1088	19,4	2343	1776	31,7
	12	822	622	11,1	1556	1177	20,2	2540	1922	33,1
	13	885	669	11,5	1676	1266	21,1	2737	2068	34,4
	14	949	716	11,9	1797	1356	21,9	2934	2214	35,7
	15	1013	764	12,4	1917	1446	22,6	3130	2361	37,0
	16	1076	811	12,8	2038	1535	23,4	3327	2507	38,2

■ CAPACITY TABLE ACC. TO ASME-CODE SEC. VIII DIV. 1

Series 4450: Blowing-off rates at 10% above set pressure

Nominal diameter DN		15			20			25		
		d0 = 13,0 mm (0,5118 in)			d0 = 18,0 mm (0,7087 in)			d0 = 23,0 mm (0,9055 in)		
		Air	Steam	Water	Air	Steam	Water	Air	Steam	Water
Set pressure bar		I	II	III	I	II	III	I	II	III
	psi (g)	SCFM	PPH	GPM	SCFM	PPH	GPM	SCFM	PPH	GPM
Air I	15	80,2	225,2	14,2	153,8	431,8	27,2	251,1	704,9	44,5
SCFM	30	117,0	328,5	19,2	224,3	629,8	36,9	366,2	1028,3	60,2
Nm³/h	40	144,0	404,3	22,2	276,0	775,0	42,6	450,7	1265,4	69,5
	50	171,0	480,0	24,8	327,8	920,3	47,6	535,2	1502,6	77,8
Steam II	60	197,9	555,8	27,2	379,5	1065,5	52,2	619,6	1739,7	85,2
PPH	70	224,9	631,5	29,4	431,2	1210,8	56,3	704,1	1976,8	92,0
kg/h	80	251,9	707,3	31,4	483,0	1356,0	60,2	788,5	2214,0	98,3
	90	278,9	783,1	33,3	534,7	1501,2	63,9	873,0	2451,1	104,3
Water III	100	305,9	858,8	35,1	586,4	1646,5	67,3	957,4	2688,2	110,0
GPM	110	332,9	934,6	36,8	638,1	1791,7	70,6	1041,9	2925,4	115,3
m³/h	120	359,8	1010,3	38,5	689,9	1936,9	73,8	1126,4	3162,5	120,5
	130	386,8	1086,1	40,1	741,6	2082,2	76,8	1210,8	3399,6	125,4
	140	413,8	1161,8	41,6	793,3	2227,4	79,7	1295,3	3636,8	130,1
	150	440,8	1237,6	43,0	845,0	2372,7	82,5	1379,7	3873,9	134,7
	160	467,8	1313,3	44,4	896,8	2517,9	85,2	1464,2	4111,0	139,1
	170	494,7	1389,1	45,8	948,5	2663,1	87,8	1548,6	4348,2	143,4
	180	521,7	1464,9	47,1	1000,2	2808,4	90,4	1633,1	4585,3	147,5
	190	548,7	1540,6	48,4	1052,0	2953,6	92,8	1717,5	4822,4	151,6
	200	575,7	1616,4	49,7	1103,7	3098,9	95,2	1802,0	5059,5	155,5
	210	602,7	1692,1	50,9	1155,4	3244,1	97,6	1886,5	5296,7	159,3
	220	629,7	1767,9	52,1	1207,1	3389,3	99,9	1970,9	5533,8	163,1
	230	656,6	1843,6	53,3	1258,9	3534,6	102,1	2055,4	5770,9	166,8
	232	662,0	1858,8	53,5	1269,2	3563,6	102,6	2072,3	5818,4	167,5