

Type test approved safety valves angle-type for industrial applications

→ Series 642

3.8

642

Safety valves made of
gunmetal, angle-type with
threaded or
flange connections



■ 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
- pump protection
- Pressure booster systems water- / air-side
- cooling-/chilling-systems
- Steam- and industrial-boiler systems

Safety valves are set and sealed at the factory.

■ APPROVALS

TÜV Type test approval 2072, 2102	D/G,F
EC type examination	S/G, L
ASME	S, G, L
CRN	S, G, L
KGS	G
Type approval WRAS	
Type approval ACS	
TR ZU 032/2013 - TR ZU 010/2011	D/G (S/G), F (L)
Requirements	
AD 2000 Data sheet A2 DIN EN ISO 4126-1 PED 2014/68/EU	TRD 421 ASME-Code Sec. VIII Div. 1 KGS AA 319
Classification society	
DNVGL Bureau Veritas Lloyd's Register EMEA Russian Maritime Register of Shipping American Bureau of Shipping Registro Italiano Navale	DNVGL BV LR EMEA RS ABS RINA



■ MATERIAL



■ SPECIFICATION



1/2" – 2 1/2"



– 50°C to + 205°C
depending on version



0,5 – 16 bar



DN 25 – DN 65

■ MATERIALS

Component	Material	DIN EN	ASME
Inlet body	Gunmetal	CC499K	CC499K
Outlet body	Gunmetal	CC499K	CC499K
Internal parts	Brass	CW617N	CW617N
Internal wetted parts	Dezincification resistant brass	CW602N	CW602N
	Stainless steel	1.4404	316L
Spring	Stainless steel	1.4310	302

Series 642 ■ 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.
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■ MEDIUM

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

L	Lifting lever
0	without lifting device

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN		15	20	25	32	40	50	65
Inlet		1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)	2 1/2" (65)
Outlet	1/2" (15)	■						
	3/4" (20)		■					
	1" (25)			■				
	1 1/4" (32)				■			
	1 1/2" (40)					■		
	2" (50)						■	
	2 1/2" (65)							■

■ 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
FLDIN / f		Flange connection (from DN 25) / Female thread BSP-P	DIN EN ISO 228-1 / DIN EN ISO 228-1

■ 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	Elastomere seals and moulded diaphragm	-20°C to +200°C

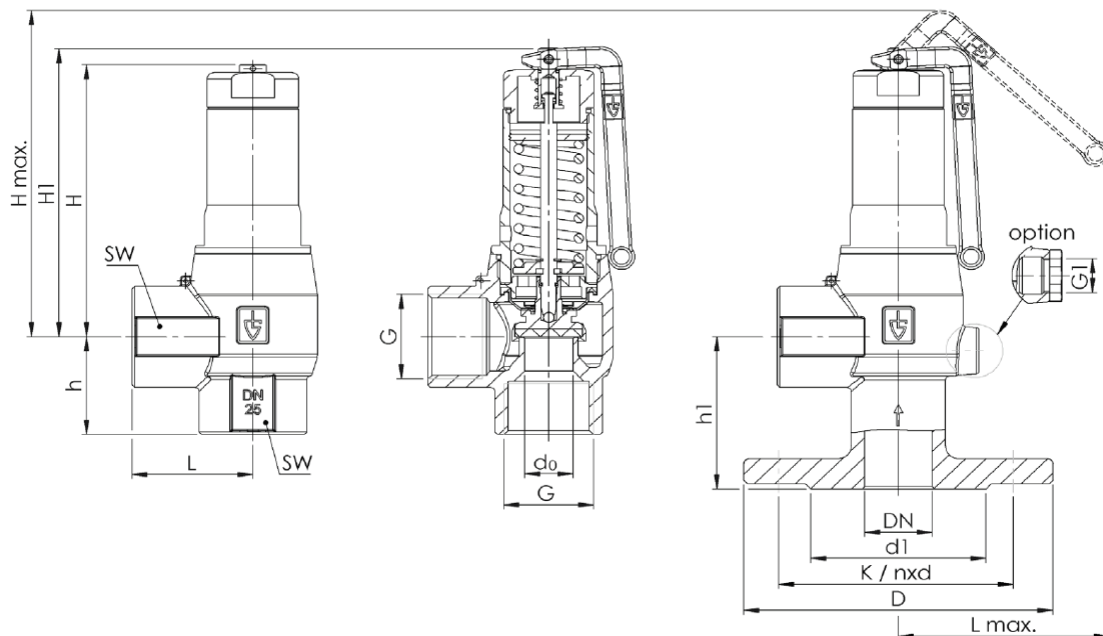
■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 642: Connection, installation dimensions, ranges of adjustment

Nominal diameter	DN	15	20	25	32	40	50	65
Connection DIN EN ISO 228	G	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)	2 1/2" (65)
Connection DIN EN 1092-3	DN / PN			25 / 16	32 / 16	40 / 16	50 / 16	65 / 16
Connection ANSI B 16.24	NPS / CLASS			1" / 150	1 1/4" / 150	1 1/2" / 150	2" / 150	2 1/2" / 150
Outlet DIN EN ISO 228	G	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)	2 1/2" (65)
Installation dimensions in mm	L	35,5	42,5	45	48	58	68	80
	Lmax	63	75	77	102	145	150	155
	H	82	97	107	132	168	199	240
	H1	90	106	120	150	192	229	276
	Hmax	102	120	133	153	210	252	298
	h	28	36	38	39	45	55	65
	h1			60	66	73	83	96
	D DIN / ANSI			115 / 110	140 / 115	150 / 125	165 / 150	185 / 180
	d1 DIN / ANSI			65 / 50,8	76 / 63,5	84 / 73	99 / 92,1	118 / 104,8
	SW	27	34	41	50	60	70	90
Coefficients of flow ISO 4126-1	αw / Kdr (F)	0,41	0,39	0,34	0,4	0,38	0,38	0,38
	αw / Kdr (D/G) ¹	0,6	0,56	0,51	0,6	0,55	0,55	0,55
Coefficients of flow ASME-Code Sec. VIII Div. 1	αw / Kdr (F)	0,43	0,43	0,43	0,43	0,36	0,36	0,36
	αw / Kdr (D/G)	0,65	0,65	0,65	0,65	0,55	0,55	0,55
Weight	kg	0,5	0,8	1,1	1,7	3,3	5,8	8,9
	kg FLDIN / FLANSI			2,0 / 1,9	3,4 / 2,9	4,1 / 3,5	8,4 / 7,9	12,0 / 11,8
Range of adjustment	bar	0,5 - 16	0,5 - 16	0,5 - 16	0,5 - 16	0,5 - 16	0,5 - 16	0,5 - 16
Range of adjustment ASME	psi	15 - 232	15 - 232	15 - 232	15 - 232	15 - 232	15 - 232	15 - 232

¹Coefficients of flow for blow-off pressures for blow-off pressures > 3,5 bar. For lower pressures refer to values in the capacity table.

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



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

Series 642: Blowing-off rates at 10% above set pressure													
Nominal diameter DN		15			20			25			32		
		d0 = 13 mm			d0 = 15 mm			d0 = 18 mm			d0 = 23 mm		
	Set pressure bar	I	II	III	I	II	III	I	II	III	I	II	III
Air I	0,5	74	56	2,1	85	64	2,7	105	79	3,4	208	157	6,6
	Nm³/h												
	1	106	84	2,9	124	97	3,7	156	123	4,6	315	251	8,9
Steam II	2	173	136	4,1	204	159	5,2	266	208	6,5	525	413	12,6
	3	233	181	5,0	279	217	6,4	372	289	8,0	729	570	15,4
	kg/h												
	4	293	226	5,8	357	276	7,4	477	368	9,2	916	710	17,7
	5	352	272	6,5	438	338	8,2	574	443	10,3	1103	851	19,8
	Water III												
m³/h	6	412	318	7,1	512	395	9,0	671	518	11,3	1289	992	21,7
	7	471	364	7,7	586	452	9,7	768	593	12,2	1476	1130	23,5
	8	531	410	8,2	660	509	10,4	865	668	13,1	1662	1269	25,1
	9	591	456	8,7	734	566	11,0	963	743	13,9	1849	1408	26,6
	10	650	502	9,2	808	623	11,6	1060	818	14,6	2036	1546	28,1
	11	710	548	9,6	882	680	12,2	1157	892	15,3	2222	1683	29,4
	12	770	594	10,1	956	738	12,7	1254	967	16,0	2409	1820	30,7
	13	829	640	10,5	1030	795	13,3	1351	1042	16,7	2595	1958	32,0
	14	889	686	10,9	1104	852	13,8	1448	1117	17,3	2782	2097	33,2
	15	948	732	11,3	1178	909	14,3	1545	1192	17,9	2969	2234	34,4
16	1008	778	11,6	1252	966	14,7	1643	1267	18,5	3155	2372	35,5	

Series 642: Blowing-off rates at 10% above set pressure										
Nominal diameter DN		40			50			65		
		d0 = 30 mm			d0 = 39 mm			d0 = 48 mm		
Set pressure bar		I	II	III	I	II	III	I	II	III
Air I	0,5	338	276	10,5	571	466	17,7	864	706	26,8
Nm³/h	1	491	392	14,3	831	662	24,1	1258	1003	36,5
	2	816	642	20,2	1379	1085	34,2	2089	1643	51,8
Steam II	3	1128	879	24,8	1907	1486	41,9	2888	2251	63,5
kg/h	4	1430	1107	28,7	2417	1872	48,4	3661	2835	73,4
	5	1721	1326	32,1	2909	2241	54,2	4407	3395	82,1
Water III	6	2013	1544	35,1	3402	2609	59,4	5153	3953	89,9
m³/h	7	2304	1762	37,9	3894	2977	64,1	5899	4510	97,1
	8	2595	1979	40,6	4386	3344	68,6	6644	5066	103,9
	9	2887	2196	43,0	4879	3711	72,7	7390	5621	110,2
	10	3178	2412	45,4	5371	4077	76,7	8136	6175	116,1
	11	3469	2629	47,6	5863	4443	80,4	8882	6730	121,8
	12	3761	2845	49,7	6356	4809	84,0	9627	7284	127,2
	13	4052	3061	51,7	6848	5174	87,4	10373	7837	132,4
	14	4343	3278	53,7	7340	5541	90,7	11119	8393	137,4
	15	4635	3495	55,6	7833	5907	93,9	11865	8948	142,3
	16	4926	3711	57,4	8325	6272	97,0	12611	9501	146,9