

→ Series 412



■ MATERIAL



■ SPECIFICATION



1/2" – 2"



– 60°C to + 225°C depending on version



0,2 – 50 bar depending on version

■ SUITABLE FOR

Air, gases and vapours neutral



■ EXAMPLES OF USE

For the protection of:

- pressure tanks and
- pressure systems

for air and other neutral, non-poisonous and non-flammable gases which can be freely discharged into the environment.

Please observe plant-specific regulations and use of appropriate valve version and sealing material.

- pneumatic control units
- pressure booster plants air-side
- waste water treatment plants
- traffic- and railway technology
- pneumatic braking systems
- secondary areas in the food-, pharmaceutical- and cosmetics- industries

**Safety valves are set and sealed at the factory.**

■ APPROVALS

TÜV Type test approval 2003	D/G
ASME	G
CRN	G
EC type examination	S/G
TSG ZF001-2006	D/G (S/G)
KGS	G
TR ZU 032/2013 - TR ZU 010/2011	D/G (S/G)

Requirements

AD 2000 Data sheet A2  
DIN EN ISO 4126-1  
PED 2014/68/EU

ASME-Code Sec. VIII Div. 1  
KGS AA 319

Classification society

DNVGL	DNVGL
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	1.4404	316 L
Internal parts	Stainless steel	1.4404	316 L
Spring	Stainless steel	1.4310 / 1.4568	302 / 631
Sealing cap	Stainless steel	1.4301	304

<b>s</b>	Standard	cylindrical form, atmospheric discharge, for air and similar neutral, non-toxic and non-flammable gases that can be freely discharged into the atmosphere.
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## ■ MEDIUM

<b>G</b>	gaseous	Air and similar neutral gases
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## ■ TYPE OF LIFTING MECHANISM

<b>K</b>	Standard with twist-type lifting mechanism	
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## ■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN	15	20	25	32	40	50
<b>Inlet</b>	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)
Atmospheric discharge via outlet apertures	■	■	■	■	■	■

## ■ TYPE OF CONNECTION INLET / OUTLET THREADED CONNECTIONS

<b>m / -</b>	Standard	Male thread BSP-P / -	DIN EN ISO 228-1 / -
<b>BSP-Tm / -</b>		Male thread BSP-T / -	DIN EN 10226, ISO 7-1 / -
<b>NPT-m / -</b>		Male thread NPT / -	ANSI B1.20.1 / -

## ■ SEALS

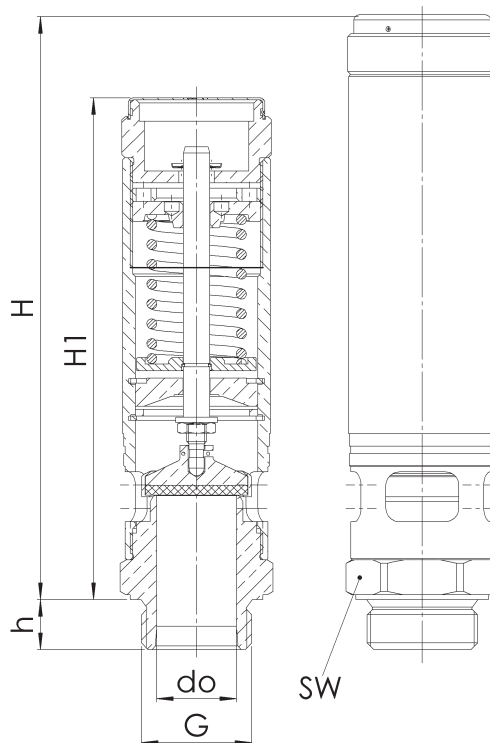
<b>NBR</b>	Nitrile rubber	Elastomere flat seal	-30°C to +130°C
<b>FKM</b>	Fluorocarbon	Elastomere flat seal	-20°C to +200°C
<b>PTFE</b>	Polytetrafluoroethylene	Flat seal from 1 bar	-60°C to +225°C
<b>EPDM</b>	Ethylene propylene diene	Elastomere flat seal	-40°C to +170°C

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

Series 412: Connection, installation dimensions, ranges of adjustment							
Nominal diameter	DN	15	20	25	32	40	50
Connection DIN EN ISO 228	G	1/2" (15)	3/4" (20)	1" (25)	1 1/4" (32)	1 1/2" (40)	2" (50)
Installation dimensions in mm	H (H1)	144	177	177	215 (177 <sup>1</sup> )	215 (177 <sup>1</sup> )	282
	SW	12	15	15	22,5	22,5	26
	do	32	41	41	55	55	80
	Weight	kg	0,6	1,3	1,3	2,6	2,6
Range of adjustment	bar	0,2-50	0,2-50	0,2-50	0,2-50	0,2-50	0,2-30
Range of adjustment ASME	psi	15-725	15-725	15-725	15-725	15-725	15-435

<sup>1</sup>Type 412 with the option SHORT for the pressure range 0,2 to 6 bar also available as short version

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



Series	Valve version	Medium	Lifting device	Nominal diameter DN	Connection type		Connection size		Seal	Options	Set pressure	Quantity
					Inlet	Outlet	Inlet	Outlet				
412	s	G	K	20	NPT-m	–	20	–	FKM		4,5	2
412	s	G	K	40	NPT-m	–	40	–	PTFE	SHORT	5,0	5
412	s	G	K			–		–				
412	s	G	K			–		–				

### ■ PROPERTIES

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

### ■ CERTIFICATES / APPROVALS

<b>C01</b>	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	<input type="checkbox"/>	<b>C06</b>	ATEX evaluation acc. to 2014/34/EU	<input type="checkbox"/>
<b>C02</b>	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)	<input type="checkbox"/>	<b>C07</b>	SIL evaluation relating to IEC 61508-2	<input type="checkbox"/>
<b>C03</b>	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	<input type="checkbox"/>	<b>C09</b>	Seat tightness test with helium, leak detection method under vacuum incl. Factory Inspection Certificate 3.1 acc. to DIN EN 10204	<input type="checkbox"/>
<b>C04</b>	TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)	<input type="checkbox"/>	<b>C10</b>	Certificate of oil- and grease free production	<input type="checkbox"/>
<b>C05</b>	Manufacturer certification (FDA, USP 3, 3-A, ...), Please indicate description of certificate: .....	<input type="checkbox"/>	<b>C11</b>	Certification of the production process especially for gaseous oxygen applications by employment of specific materials	<input type="checkbox"/>

### ■ ADMISSIONS / ACCREDITATIONS

<b>AA1</b>	EC Type examination acc. to Directive 2014/68/EU	<input type="checkbox"/>	<b>AK1</b>	DNV-GL (DNVGL) type approval	<input type="checkbox"/>
<b>AA2</b>	TÜV component test acc. to VdTÜV specification sheet SV 100	<input type="checkbox"/>	<b>AK2</b>	Lloyd's Register (LR) type approval	<input type="checkbox"/>
<b>AA3</b>	Certification acc. to ASME Boiler and Pressure Vessel Code, Section VIII.Div 1 (ASME)	<input type="checkbox"/>	<b>AK3</b>	American Bureau of Shipping (ABS) type approval	<input type="checkbox"/>
<b>AA4</b>	EAC - certificate/declaration with passport for the valve and laser marking of the valve	<input type="checkbox"/>	<b>AK4</b>	Bureau Veritas (BV) type approval	<input type="checkbox"/>
<b>AA5</b>	Manufacture License of Special Equipment People's Republic of China (ML)	<input type="checkbox"/>	<b>AK5</b>	Russian Maritime Register of Shipping (RMRS) type approval	<input type="checkbox"/>
<b>AA6</b>	Certification acc. to. Korean Gas Safety Corporation (KGS) <sup>3</sup>	<input type="checkbox"/>	<b>AK6</b>	Registro Italiano Navale (RINA) type approval	<input type="checkbox"/>
<b>AA7</b>	Registration according to Canadian Registration Number (CRN) <sup>4</sup>	<input type="checkbox"/>	<b>AL</b>	Individual inspection by notified body inspector – (body to be indicated): .....	<input type="checkbox"/>

<sup>3</sup>KGS only in combination with ASME | <sup>4</sup>CRN only in combination with ASME

### ■ ENQUIRY

Copy and send to: [order@goetze-armaturen.de](mailto:order@goetze-armaturen.de).

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

Series 412: Blowing-off rates at 10% above set pressure							
Nominal diameter DN		15	20	25	32	40	50
Set pressure bar							
Air	0,2	61	167	240	401	401	768
	0,3	76	189	272	453	453	827
	0,4	88	205	296	493	493	887
	0,5	99	222	320	534	534	946
	0,6	110	240	345	576	576	1005
	0,7	121	262	377	629	629	1064
	0,8	129	280	404	673	673	1123
	0,9	138	299	431	719	719	1182
	1	147	319	459	766	766	1370
	1,5	194	419	604	1007	1007	1827
	2	245	520	749	1249	1249	2325
	3	338	717	1032	1723	1723	3177
	4	436	923	1330	2219	2219	4056
	5	524	1112	1601	2671	2671	4962
	6	613	1300	1872	3123	3123	5802
	7	702	1488	2143	3575	3575	6642
	8	790	1676	2413	4027	4027	6034
	9	879	1864	2684	4478	4478	6711
	10	968	2052	2955	4930	4930	7388
	11	1057	2240	3226	5382	5382	8065
	12	1145	2428	3497	5834	5834	8742
	13	1234	2617	3768	6286	6286	9420
	14	1323	2805	4039	6738	6738	10097
	15	1412	2993	4310	7190	7190	10774
	16	1500	3181	4581	7642	7642	11451
	17	1589	3369	4851	8094	8094	12129
	18	1678	3557	5122	8546	8546	12806
	19	1766	3745	5393	8998	8998	13483
	20	1855	3933	5664	9450	9450	14160
	21	1944	4122	5935	9902	9902	14838
	22	2033	4310	6206	10354	10354	15515
23	2121	4498	6477	10806	10806	16192	
24	2210	4686	6748	11258	11258	16869	
25	2299	4874	7019	11710	11710	17546	
26	2387	5062	7289	12162	12162	18224	
27	2476	5250	7560	12614	12614	18901	
28	2565	5438	7831	13066	13066	19578	
29	2654	5626	8102	13518	13518	20255	
30	2742	5815	8373	13970	13970	20933	
31	2831	6003	8644	14422	14422	-	
32	2920	6191	8915	14874	14874	-	
33	3009	6379	9186	15325	15325	-	
34	3097	6567	9457	15777	15777	-	
35	3186	6755	9727	16229	16229	-	
36	3275	6943	9998	16681	16681	-	
37	3363	7131	10269	17133	17133	-	
38	3452	7320	10540	17585	17585	-	
39	3541	7508	10811	18037	18037	-	
40	3630	7696	11082	18489	18489	-	
41	3718	7884	11353	18941	18941	-	
42	3807	8072	11624	19393	19393	-	
43	3896	8260	11895	19845	19845	-	
44	3984	8448	12166	20297	20297	-	
45	4073	8636	12436	20749	20749	-	
46	4162	8825	12707	21201	21201	-	
47	4251	9013	12978	21653	21653	-	
48	4339	9201	13249	22105	22105	-	
49	4428	9389	13520	22557	22557	-	
50	4517	9577	13791	23009	23009	-	

**Series 412: Blowing-off rates at 10% above set pressure**

Nominal diameter DN		15	20	25	32	40	50
Set pressure psi(g)							
Air	15	111	226	326	543	543	985
	30	162	330	475	792	792	1437
SCFM	40	199	406	584	975	975	1768
	50	236	482	694	1158	1158	2099
	60	273	558	803	1340	1340	2430
	70	311	634	913	1523	1523	2762
	87	374	763	1099	1834	1834	3325
	90	385	786	1132	1888	1888	3424
	100	422	862	1241	2071	2071	3755
	110	460	938	1351	2254	2254	4087
	120	497	1014	1460	2437	2437	4418
	130	534	1090	1570	2619	2619	4749
	140	571	1166	1679	2802	2802	5081
	150	609	1242	1789	2985	2985	5412
	160	646	1318	1898	3167	3167	5743
	170	683	1394	2008	3350	3350	6074
	180	721	1470	2117	3533	3533	6406
	190	758	1546	2227	3715	3715	6737
	200	795	1623	2336	3898	3898	7068
	210	832	1699	2446	4081	4081	7400
	220	870	1775	2555	4263	4263	7731
	230	907	1851	2665	4446	4446	8062
	240	944	1927	2774	4629	4629	8393
	250	981	2003	2884	4812	4812	8725
	260	1019	2079	2993	4994	4994	9056
	270	1056	2155	3103	5177	5177	9387
	280	1093	2231	3212	5360	5360	9718
	290	1130	2307	3322	5542	5542	10050
	300	1168	2383	3431	5725	5725	10381
	320	1242	2535	3650	6090	6090	11044
	340	1317	2687	3869	6456	6456	11706
	360	1391	2839	4088	6821	6821	12369
	380	1466	2991	4307	7187	7187	13031
	400	1540	3143	4527	7552	7552	13694
	420	1615	3295	4746	7917	7917	14356
	435	1671	3410	4910	8191	8191	14853
	460	1764	3600	5184	8648	8648	-
	480	1838	3752	5403	9014	9014	-
	500	1913	3904	5622	9379	9379	-
	550	2099	4284	6169	10292	10292	-
	600	2286	4664	6717	11206	11206	-
	650	2472	5045	7264	12119	12119	-
	700	2658	5425	7812	13033	13033	-
	725	2751	5615	8085	13490	13490	-