

ANSI-Full lift safety valve / ANSI-Standard safety valve

ARI-SAFE-ANSI

Full lift safety valve D/G
Standard safety valve F

- ASME Code Section VIII-Division 1.

- UV-stamp NB-stamp



- Type-test approved acc. to TRD and AD2000-A2

- TÜV · SV · . . . -663 · D/G **Figure 901-912**

- TÜV · SV · . . . -663 · F **Figure 901/911**

- Further approvals: see inside

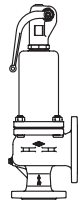
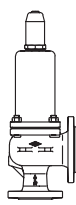


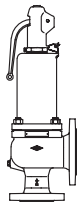
Fig. 901



902



911



912

Page 2

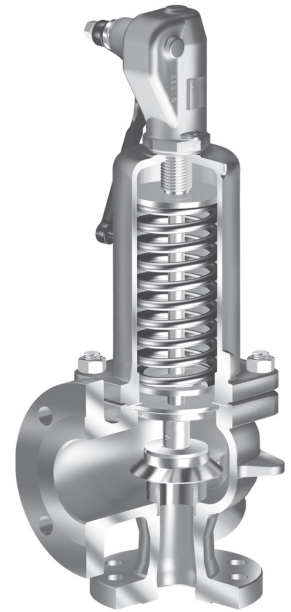


Fig. 900

Features:

- Direct loaded with spring
- Wear resistant seat/disc
- Precision disc alignment and guide
- Possible with soft seal disc
- Possible with EPDM bellow
- Possible with stainless steel bellow

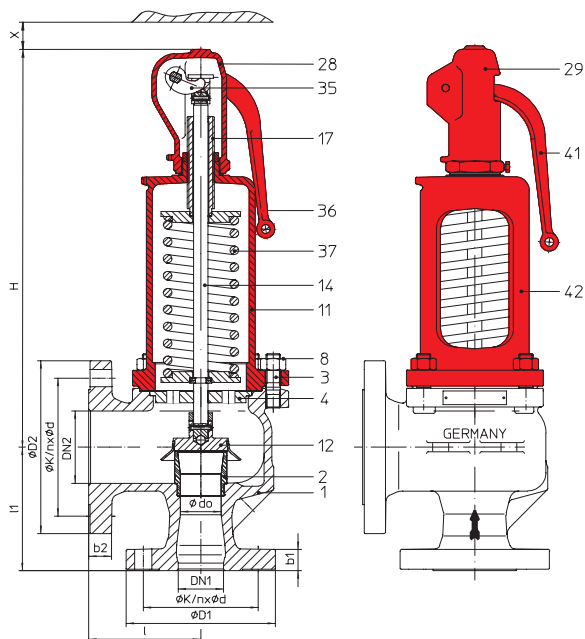
ARI-SAFE -ANSI - Full lift safety valve D/G, Standard safety valve F

Fig.901
closed lifting device

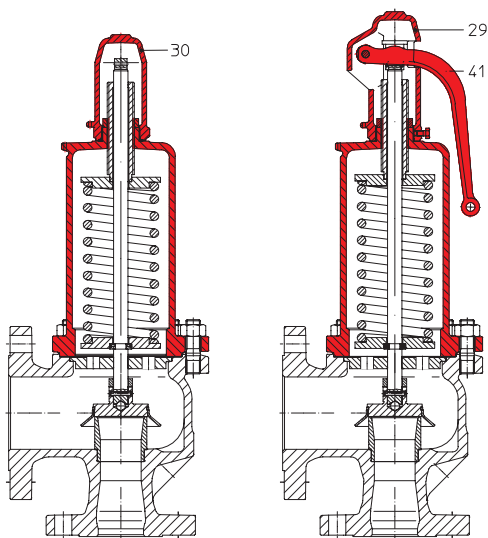
Fig.902
open lifting device

Fig.911
gastight cap

Fig.912
open lifting device

Figure	Nominal pressure	Material	Nominal diameter
32.901 / 902 / 911 / 912	ANSI150/150	SA216WCB	1" x 2" - 6" x 10"
35.901 / 902 / 911 / 912	ANSI300/150	SA216WCB	1" x 2" - 6" x 10"

Temperature range: -20°F to +800°F / -29°C to +427°C
 Flanges: ASME B16.5
 Spring ranges refer to page 10

Marking
 UV-stamp NB-stamp
 Set gauge pressure refer to „Capacity“ (Page 4).



Requirement
ASME Code Section VIII-Division 1.

Construction / Application
 Safety valve, spring loaded, direct loaded
 neutral gases, vapours and liquids.

Sizing
 Calculation acc. to ASME.

Details required

- Medium gasform: Mass flow (lb/h), SCFM, molar mass (kg/kmol), temperature (°F), set gauge pressure (psig), back gauge pressure (psig)
- Medium liquid: Volume flow (gal/min), density, viscosity, temperature (°F), set gauge pressure (psi gauge), back gauge pressure (psi gauge)

Order data:
 ARI-SAFE-ANSI - safety valve,
 Figure ..., Nominal diameter .../..., Class ..., Material ..., Set gauge pressure ...psig

Type-test approval
 Full lift safety valve: TÜV · SV · . . -663 · D/G (Standard valve 0,2-0,5 bar)
 Standard safety valve: TÜV · SV · . . -663 · F DN 20-150
 Set gauge pressure refer to „Capacity“.

Requirement
acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2, TRD 421

Construction / Application
 Safety valve, spring loaded, direct loaded
 steam, neutral gases, vapours and liquids

Sizing
 Calculation acc. to EN ISO 4126-1, TRD 421 and AD2000-A2.

Details required

- Medium gasform: Mass flow (kg/h), molar mass (kg/kmol), temperature (°C), set gauge pressure (bar), back gauge pressure (bar)
- Medium liquid: Mass flow (kg/h), density (kg/m³), viscosity, temperature (°C), Set gauge pressure (bar), back gauge pressure (bar)

Order data:
 ARI-SAFE-ANSI - safety valve,
 Figure ..., DN .../..., PN ..., Material ..., Set gauge pressure ...bar

Selection of possible applications
 Industrial installations, processing technology, plant manufacturing, etc.
 (other applications on request)

Selection of possible flow media
 Steam, neutral gases, vapours and liquids
 (other flow media on request)

	without metal bellow	with metal bellow
Superimposed back pressure	no backpressure allowed	on request
Built up back pressure	max. 10% from set pressure (gauge) (higher on request)	on request

Dimensions and weights

Nominal diameter	(inch)	1"x2"		1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
API-orifice letter		(D)	E (D)	F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R
d ₀	(inch)	0,709	0,886	1,142	1,142	1,417	1,772	2,303	3,543	3,543	4,173	4,921
A ₀	(inch ²)	0,394	0,617	1,024	1,024	1,578	2,465	4,166	9,861	9,861	13,678	19,022
I	(inch)	4 1/2		4 3/4	4 3/4	4 7/8	4 7/8	6 1/2	7 1/4	9	9 1/2	10 1/2
I1	(inch)	4 1/8		4 7/8	4 7/8	5 1/8	5 3/8	6 1/8	7	7 1/8	9 7/16	9 7/16
H	(inch)	11		13	13	15,4	17	21,5	27	27	33,3	35
H (Bellow design)	(inch)	13,2		15,4	15,4	17,5	19,7	24,4	30,3	30,3	--	--
X	(inch)	6		8	8	10	12	14	20		20	20
Weight	(lbs)	26		40	40	51	66	103	176	180	308	374
Weight (Bellow design)	(lbs)	30		44	44	56	75	119	198	202	--	--

Nominal diameter	(inch)	1"x2"		1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
API-orifice letter		(D)	E (D)	F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R
d ₀	(mm)	18	22,5	29	29	36	45	58,5	90	90	106	125
A ₀	(mm ²)	254	398	661	661	1018	1590	2688	6362	6362	8825	12272
I	(mm)	114,3		120,7	120,7	123,8	123,8	165,1	184,2	228,6	241,3	266,7
I1	(mm)	104,8		123,8	123,8	130,2	136,5	155,6	177,8	181	239,7	239,7
H	(mm)	280		330	330	390	435	545	690	690	845	890
H (Bellow design)	(mm)	335		390	390	445	500	620	770	770	--	--
X	(mm)	150		200	200	250	300	350	500		500	500
Weight	(kg)	12		18	18	23	30	47	80	82	140	170
Weight (Bellow design)	(kg)	13,5		20	20	25,5	34	54	90	92	--	--

Center to face dimensions acc. to API 526

Standard-flange dimensions refer to page 10.

Parts

Pos.	Description	Fig. 32.901/902/911/912 / 35.901/902/911/912
1	Body	SA216WCB
2	Seat	SA 479 Gr.316 Ti
3	Studs	SA 193 B7
4	Spindle guide	DN ≤ 2": AISI 420; DN > 2": SA 395 / AISI 440
8	Hexagon nut	SA 194 2H
11	Bonnet, closed	SA 395
12	Disc unit	AISI 440
14	Spindle *	AISI 420
17	Adjusting screw	AISI 420
28	Cap, closed	SA 395
29	Cap, open	SA 395
30	Cap, gastight	SA 395
35	Lift fork	SA 395
36	Lever, closed	SA 395
37	Spring *	AISI 9254, AISI 6150
41	Lever, open	SA 395
42	Bonnet, open	SA 395
43	Bellow (optional)	EPDM
55	Bellow unit (optional)	SA 240 Gr. 316 Ti / SA 479 Gr. 316 Ti
70	Balanced piston (optional)	SA 240 Gr. 316 Ti

* Spare parts

Information / restriction of technical rules need to be observed!

A production allowance acc. to TRB 801 No. 45 exists

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Capacity saturated steam / air incl. 10% overpressure ¹⁾

Set gauge pressure (psig)			I Saturated steam lb/hr (pounds per hour)										II Air 60°F and 14,7 psia (standard cubic feet per minute)							
Orifice letter	1" x 2" ²⁾		1 1/2" x 2"		1 1/2" x 2 1/2"		1 1/2" x 3"		2" x 3"		3" x 4"		4" x 6"		4" x 6"		6" x 8"		6" x 10"	
	(D) E		F		G		H		(H) J		(K) L		(L) M		(N) P		Q		R	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
15 ³⁾	510	182	1326	472	1326	472	2044	727	3192	1136	5395	1920	12770	4546	12770	4545	17713	6305	24634	8768
20 ³⁾	588	209	1529	544	1529	544	2356	839	3680	1310	6220	2214	14723	5240	14723	5240	20422	7269	28401	10109
25 ³⁾	666	237	1732	616	1732	616	2668	950	4168	1484	7045	2508	16676	5936	16676	5936	23140	8233	32167	11450
29	729	259	1894	674	1894	674	2918	1039	4559	1623	7705	2742	18238	6492	18238	6492	25297	9004	35181	12522
30	1238	441	2055	732	2055	732	3167	1127	4947	1761	8361	2976	19791	7044	19791	7044	27452	9771	38177	13589
35	1381	492	2292	816	2292	816	3532	1257	5518	1964	9325	3319	22073	7857	22073	7857	30617	10898	42579	15156
40	1524	542	2529	900	2529	900	3897	1387	6088	2167	10289	3662	24355	8669	24355	8669	33782	12025	46981	16723
45	1667	593	2766	985	2766	985	4263	1517	6659	2370	11253	4006	26637	9481	26637	9481	36948	13151	51383	18289
50	1809	644	3003	1069	3003	1069	4628	1647	7229	2573	12217	4349	28919	10293	28919	10293	40113	14278	55785	19856
55	1952	695	3240	1153	3240	1153	4993	1777	7799	2776	13182	4692	31201	11106	31201	11106	43278	15405	60187	21423
60	2095	746	3477	1238	3477	1238	5358	1907	8370	2979	14146	5035	33483	11918	33483	11918	46444	16531	64589	22990
65	2238	797	3714	1322	3714	1322	5723	2037	8940	3182	15110	5378	35765	12730	35765	12730	49609	17658	68991	24557
70	2381	847	3951	1406	3951	1406	6088	2167	9511	3385	16074	5721	38047	13542	38047	13542	52774	18785	73393	26124
75	2523	898	4188	1491	4188	1491	6454	2297	10081	3588	17038	6064	40329	14355	40329	14355	55939	19911	77795	27690
80	2666	949	4425	1575	4425	1575	6819	2427	10652	3791	18002	6408	42611	15167	42611	15167	59105	21038	82197	29257
85	2809	1000	4662	1659	4662	1659	7184	2557	11222	3994	18966	6751	44893	15979	44893	15979	62270	22165	86599	30824
90	2952	1051	4899	1744	4899	1744	7549	2687	11793	4197	19930	7094	47175	16792	47175	16792	65435	23291	91001	32391
95	3095	1101	5136	1828	5136	1828	7914	2817	12363	4400	20894	7437	49457	17604	49457	17604	68601	24418	95403	33958
100	3237	1152	5373	1912	5373	1912	8279	2947	12933	4604	21858	7780	51739	18416	51739	18416	71766	25544	99805	35525
125	3951	1406	6558	2334	6558	2334	10105	3597	15786	5619	26679	9496	63149	22477	63149	22477	87592	31178	121815	43359
150	4665	1661	7742	2756	7742	2756	11931	4247	18638	6634	31499	11212	74559	26539	74559	26539	103419	36811	143825	51193
175	5379	1915	8927	3178	8927	3178	13757	4897	21490	7649	36319	12928	85969	30600	85969	30600	119245	42444	165835	59027
200	6093	2169	10112	3599	10112	3599	15583	5547	24342	8664	41140	14643	97379	34661	97379	34661	135072	48078	187845	66862
225	6807	2423	11297	4021	11297	4021	17409	6197	27194	9680	45960	16359	108788	38722	108788	38722	150898	53711	209854	74696
250	7521	2677	12482	4443	12482	4443	19235	6846	30047	10695	50781	18075	120198	42784	120198	42784	166725	59344	231864	82530
275	8235	2931	13667	4865	13667	4865	21061	7496	32899	11710	55601	19791	131608	46845	131608	46845	182551	64978	253874	90364
300	8949	3185	14852	5286	14852	5286	22886	8146	35751	12725	60421	21506					198378	70611	275884	98199
325	9663	3439	16036	5708	16036	5708	24712	8796	38603	13740	65242	23222					214204	76244		
350	10376	3693	17221	6130	17221	6130	26538	9446	41455	14756	70062	24938					230031	81878		
375	11090	3948	18406	6551	18406	6551	28364	10096	44308	15771	74882	26654					245857	87511		
400	11804	4202	19591	6973	19591	6973	30190	10746	47160	16786	79703	28370								
425	12518	4456	20776	7395	20776	7395	32016	11396	50012	17801										
450	13232	4710	21961	7817	21961	7817	33842	12046	52864	18817										
475	13946	4964	23145	8238	23145	8238	35667	12696	55716	19832										
493	14460	5147	23999	8542	23999	8542	36982	13163	57770	20563										

¹⁾ Capacities below 30 psig set pressure are calculated at 3 psig overpressure.

²⁾ 1" x 2" 15-29 psig: do = 0,709 inch (>29 psig: do = 0,88 inch)

³⁾ 15 - 29 psi: k = 0,769 (>29 psi: k = 0,817)

Capacity water incl. 10% overpressure ¹⁾

Set gauge pressure (psig)				Water gal/min (U.S. Gallons per minute)						
Orifice letter	1"x2"	1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
	(D) E	F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R
15	61	90	90	139	217	366	866	866	1202	1671
20	69	102	102	157	245	414	979	979	1358	1889
25	76	112	112	173	270	457	1081	1081	1499	2085
30	83	122	122	188	293	496	1173	1173	1627	2263
35	89	132	132	203	317	535	1267	1267	1758	2444
40	96	141	141	217	339	572	1355	1355	1879	2613
45	101	149	149	230	359	607	1437	1437	1993	2772
50	107	157	157	242	379	640	1514	1514	2101	2921
55	112	165	165	254	397	671	1588	1588	2203	3064
60	117	172	172	265	415	701	1659	1659	2301	3200
65	122	179	179	276	432	730	1727	1727	2395	3331
70	126	186	186	287	448	757	1792	1792	2486	3457
75	131	193	193	297	464	784	1855	1855	2573	3578
80	135	199	199	307	479	809	1916	1916	2657	3695
85	139	205	205	316	494	834	1975	1975	2739	3809
90	143	211	211	325	508	858	2032	2032	2818	3920
95	147	217	217	334	522	882	2088	2088	2896	4027
100	151	222	222	343	535	905	2142	2142	2971	4132
125	169	249	249	383	599	1012	2395	2395	3322	4619
150	185	272	272	420	656	1108	2623	2623	3639	5060
175	200	294	294	453	708	1197	2833	2833	3930	5466
200	214	315	315	485	757	1280	3029	3029	4201	5843
225	227	334	334	514	803	1357	3213	3213	4456	6197
250	239	352	352	542	847	1431	3387	3387	4697	6533
275	251	369	369	568	888	1501	3552	3552	4927	6852
300	262	385	385	594	927	1567			5146	7156
325	272	401	401	618	965	1631			5356	
350	283	416	416	641	1002	1693			5558	
375	293	431	431	664	1037	1752			5753	
400	302	445	445	685	1071	1810				
425	312	459	459	707	1104					
450	321	472	472	727	1136					
475	329	485	485	747	1167					
493	336	494	494	761	1189					

¹⁾ Capacities below 30 psig set pressure are calculated at 3 psig overpressure.

Capacity saturated steam / air incl. 10% overpressure ¹⁾

Set gauge pressure (barg)			I Saturated steam kg/h										II Air in Nm ³ /h (0°C; 1,013 bara)							
Orifice letter	1" x 2" ²⁾		1 1/2" x 2"		1 1/2" x 2 1/2"		1 1/2" x 3"		2" x 3"		3" x 4"		4" x 6"		4" x 6"		6" x 8"		6" x 10"	
	(D) E		F		G		H		(H) J		(K) L		(L) M		(N) P		Q		R	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
1 ³⁾	228	296	593	770	593	770	914	1186	1428	1853	2413	3132	5712	7413	5712	7413	7923	10283	11018	14299
1,5 ³⁾	279	362	727	943	727	943	1120	1453	1749	2269	2956	3836	6997	9080	6997	9080	9706	12596	13496	17516
2 ³⁾	331	429	860	1117	860	1117	1325	1720	2070	2686	3499	4541	8282	10748	8282	10748	11488	14909	15975	20732
2,05	556	725	923	1205	923	1205	1422	1855	2221	2898	3755	4899	8886	11596	8886	11596	12326	16085	17140	22368
2,5	643	834	1067	1385	1067	1385	1644	2133	2567	3332	4339	5633	10271	13332	10271	13332	14247	18493	19813	25716
3	737	956	1222	1588	1222	1588	1884	2445	2943	3819	4973	6456	11772	15280	11772	15280	16328	21196	22708	29475
3,5	830	1078	1378	1790	1378	1790	2124	2757	3318	4306	5607	7279	13273	17229	13273	17229	18410	23899	25603	33234
4	924	1200	1534	1992	1534	1992	2364	3069	3693	4793	6241	8103	14774	19177	14774	19177	20492	26602	28498	36992
4,5	1018	1322	1690	2195	1690	2195	2604	3380	4068	5280	6876	8926	16274	21126	16274	21126	22574	29305	31394	40751
5	1112	1443	1846	2397	1846	2397	2844	3692	4443	5767	7510	9749	17775	23074	17775	23074	24656	32008	34289	44510
6	1300	1687	2158	2802	2158	2802	3325	4316	5194	6741	8778	11396	20777	26972	20777	26972	28820	37413	40079	52027
7	1488	1931	2469	3207	2469	3207	3805	4939	5944	7715	10046	13042	23779	30869	23779	30869	32983	42819	45870	59544
8	1676	2175	2781	3612	2781	3612	4286	5563	6694	8689	11314	14689	26781	34766	26781	34766	37147	48225	51660	67062
9	1863	2419	3093	4017	3093	4017	4766	6187	7445	9663	12582	16335	29782	38663	29782	38663	41311	53631	57451	74579
10	2051	2662	3404	4422	3404	4422	5246	6810	8195	10637	13850	17982	32784	42560	32784	42560	45474	59037	63241	82096
11	2239	2906	3716	4827	3716	4827	5727	7434	8946	11611	15119	19629	35786	46457	35786	46457	49638	64443	69032	89614
12	2427	3150	4028	5232	4028	5232	6207	8057	9696	12585	16387	21275	38788	50354	38788	50354	53802	69849	74822	97131
13	2615	3394	4340	5637	4340	5637	6687	8681	10446	13559	17655	22922	41789	54251	41789	54251	57965	75254	80612	104648
14	2803	3638	4651	6041	4651	6041	7168	9304	11197	14533	18923	24568	44791	58148	44791	58148	62129	80660	86403	112166
15	2990	3881	4963	6446	4963	6446	7648	9928	11947	15506	20191	26215	47793	62046	47793	62046	66293	86066	92193	119683
16	3178	4125	5275	6851	5275	6851	8128	10552	12697	16480	21459	27861	50795	65943	50795	65943	70456	91472	97984	127200
17	3366	4369	5586	7256	5586	7256	8609	11175	13448	17454	22728	29508	53797	69840	53797	69840	74620	96878	103774	134718
18	3554	4613	5898	7661	5898	7661	9089	11799	14198	18482	23996	31154	56798	73737	56798	73737	78784	102284	109565	142235
19	3742	4857	6210	8066	6210	8066	9569	12422	14948	19402	25264	32801	59800	77634	59800	77634	82947	107690	115355	149753
20	3929	5100	6522	8471	6522	8471	10050	13046	15699	20376	26532	34448					87111	113095	121146	157270
21	4117	5344	6833	8876	6833	8876	10530	13670	16449	21350	27800	36094					91275	118501	126936	164787
22	4305	5588	7145	9281	7145	9281	11011	14293	17200	22324	29068	37741					95439	123907		
24	4681	6076	7768	10091	7768	10091	11971	15540	18700	24272	31605	41034					103766	134719		
26	5056	6563	8392	10900	8392	10900	12932	16788	20201	26220	34141	44327					112093	145531		
27	5244	6807	8704	11305	8704	11305	13412	17411	20951	27194	35409	45974					116257	150936		
28	5432	7051	9015	11710	9015	11710	13893	18035	21702	28168	36677	47620								
30	5808	7538	9639	12520	9639	12520	14853	19282	23203	30116										
32	6183	8026	10262	13330	10262	13330	15814	20529	24703	32064										
34	6559	8514	10886	14140	10886	14140	16775	21776	26204	34012										

¹⁾ Capacity below 2,05 barg set pressure are calculated at 0,21 barg overpressure.

²⁾ 1" x 2" 1 - 2 bar: do = 18 mm (>2 bar: do = 22,5 mm)

³⁾ 1 - 2 bar: k = 0,769 (>2 bar: k = 0,817)

Capacity water incl. 10% overpressure ¹⁾

Set gauge pressure (barg)				Water m ³ /h						
Orifice letter	1"x2"	1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
	(D) E	F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R
1	14	20	20	31	49	82	194	194	269	374
1,5	16	24	24	37	58	97	231	231	320	445
2	18	27	27	42	65	111	262	262	363	505
2,5	21	30	30	47	73	124	293	293	406	565
3	23	33	33	51	80	136	321	321	445	619
3,5	24	36	36	55	87	146	347	347	481	669
4	26	38	38	59	93	157	370	370	514	715
4,5	28	41	41	63	98	166	393	393	545	758
5	29	43	43	66	104	175	414	414	575	799
6	32	47	47	73	113	192	454	454	629	875
7	35	51	51	78	123	207	490	490	680	945
8	37	54	54	84	131	221	524	524	727	1011
9	39	58	58	89	139	235	556	556	771	1072
10	41	61	61	94	146	247	586	586	813	1130
11	43	64	64	98	154	260	614	614	852	1185
12	45	67	67	103	160	271	642	642	890	1238
13	47	69	69	107	167	282	668	668	926	1288
14	49	72	72	111	173	293	693	693	961	1337
15	51	75	75	115	179	303	717	717	995	1384
16	52	77	77	119	185	313	741	741	1028	1429
17	54	79	79	122	191	323	764	764	1059	1473
18	55	82	82	126	196	332	786	786	1090	1516
19	57	84	84	129	202	341	807	807	1120	1558
20	58	86	86	133	207	350			1149	1598
21	60	88	88	136	212	359			1177	1637
22	61	90	90	139	217	367			1205	
24	64	94	94	145	227	383			1259	
26	67	98	98	151	236	399			1310	
27	68	100	100	154	241	407			1335	
28	69	102	102	157	245	414				
30	72	105	105	162	254					
32	74	109	109	168	262					
34	76	112	112	173	270					

Capacity saturated steam / air incl. 10% overpressure

Set gauge pressure (barg)			I Saturated steam kg/h										II Air in Nm ³ /h (0°C; 1,013 bara)							
Orifice letter	1"x2"		1 1/2"x2"		1 1/2"x2 1/2"		1 1/2"x3"		2"x3"		3"x4"		4"x6"		4"x6"		6"x8"		6"x10"	
	(D) E		F		G		H		(H) J		(K) L		(L) M		(N) P		Q		R	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
0,2	126	148	210	246	210	246	324	380	506	594	855	1003	2024	2375	2024	2375	2510	2945	3490	4100
0,4	185	223	307	370	307	370	473	570	739	891	1250	1505	2960	3565	2960	3565	3630	4380	5050	6090
0,5	207	252	344	419	344	419	529	646	827	1009	1400	1705	3310	4035	3310	4035	4070	4970	5660	6910
0,6	230	284	383	472	383	472	590	728	923	1135	1560	1920	3690	4545	3690	4545	4470	5520	6220	7675
0,8	272	341	453	567	453	567	698	873	1090	1365	1840	2305	4360	5460	4360	5460	5240	6555	7280	9115
1	317	398	526	661	526	661	811	1019	1270	1590	2140	2690	5070	6370	5070	6370	6030	7575	8385	10530
1,5	425	538	707	894	707	894	1090	1378	1700	2150	2875	3640	6800	8610	6800	8610	8050	10195	11200	14180
2	477	607	792	1008	792	1008	1220	1550	1900	2425	3220	4100	7625	9700	7625	9700	10125	12890	14080	17920
2,5	572	731	950	1215	950	1215	1460	1870	2285	2925	3865	4945	9145	11700	9145	11700	11990	15330	16660	21300
3	662	850	1100	1410	1100	1410	1695	2175	2645	3400	4475	5750	10600	13600	10600	13600	13880	17840	19300	24800
4	837	1080	1390	1800	1390	1800	2140	2770	3350	4330	5650	7310	13400	17300	13400	17300	17550	22725	24400	31600
5	1000	1300	1665	2160	1665	2160	2565	3330	4000	5210	6770	8800	16000	20840	16000	20840	21000	27350	29250	38000
6	1165	1520	1940	2530	1940	2530	2990	3900	4665	6090	7890	10300	18650	24370	18650	24370	24500	31900	34050	44400
7	1330	1745	2210	2900	2210	2900	3400	4465	5320	6970	9000	11790	21300	27900	21300	27900	27900	36600	38800	50900
8	1495	1965	2485	3260	2485	3260	3820	5030	5980	7860	10100	13280	23900	31430	23900	31430	31350	41200	43600	57300
9	1660	2185	2755	3630	2755	3630	4245	5590	6630	8740	11200	14770	26500	34960	26500	34960	34800	45800	48400	63800
10	1820	2400	3025	3990	3025	3990	4665	6150	7290	9610	12300	16250	29150	38500	29150	38500	38250	50500	53200	70200
11	1985	2625	3300	4360	3300	4360	5080	6720	7940	10500	13400	17750	31750	42000	31750	42000	41600	55100	58000	76600
12	2150	2845	3570	4730	3570	4730	5500	7290	8590	11380	14500	19240	34350	45500	34350	45500	45100	59700	62700	83100
13	2310	3070	3840	5090	3840	5090	5920	7850	9250	12270	15600	20730	37000	49000	37000	49000	48500	64400	67500	89500
14	2475	3290	4110	5460	4110	5460	6340	8400	9900	13150	16700	22200	39600	52600	39600	52600	52000	69000	72300	96000
15	2640	3500	4385	5830	4385	5830	6760	8980	10550	14030	17800	23700	42200	56100	42200	56100	55400	73600	77000	102400
16	2800	3725	4655	6190	4655	6190	7170	9540	11200	14900	18950	25200	44800	59600	44800	59600	58800	78200	81800	108800
17	2965	3950	4930	6560	4930	6560	7590	10100	11850	15800	20050	26700	47400	63100	47400	63100	62200	82900	86600	115300
18	3130	4170	5200	6920	5200	6920	8010	10670	12500	16650	21150	28100	50100	66700	50100	66700	65700	87500	91400	121700
19	3295	4390	5470	7300	5470	7300	8430	11240	13150	17550	22250	29600	52700	70200	52700	70200	69100	92100	96200	128100
20	3460	4610	5750	7660	5750	7660	8850	11800	13800	18400	23350	31150	55300	73700	55300	73700	72600	96800	101000	134600
21	3620	4830	6020	8020	6020	8020	9250	12370	14500	19300	24500	32650	57900	77300	57900	77300	76000	101400	105800	141000
22	3790	5050	6290	8390	6290	8390	9700	12930	15150	20200	25600	34150	60600	80800	60600	80800	79500	106000	110900	147500
24	4120	5490	6840	9120	6840	9120	10500	14060	16450	21970	27850	37100	65900	87900	65900	87900	86500	115300	120600	160400
25	4280	5710	7120	9490	7120	9490	10950	14620	17100	22850	28950	38600					90200	120000	125500	166900
26	4450	5930	7390	9850	7390	9850	11350	15190	17800	23730	30050	40100					93700	124600	130300	173300
28	4780	6370	7950	10600	7950	10600	12250	16320	19100	25500	32300	43100								
30	5120	6810	8500	11320	8500	11320	13100	17450	20450	27250										
32	5450	7250	9060	12050	9060	12050	13950	18570	21800	29000										
34	5800	7700	9650	12790	9650	12790	14850	19700	23250	30800										
40																				

TÜV · SV · ...663 · D/G

Capacity water incl. 10% overpressure

Set gauge pressure (bar)			Water m ³ /h (20°C)							
Orifice letter	1"x2"	1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
	(D) E	F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R
0,2	5,13	8,53	8,53	13,1	20,5	30,8	73,0	73,0	94,9	132,0
0,5	8,12	13,5	13,5	20,8	32,5	48,8	115,0	115,0	150,0	209,0
1	11,5	19,1	19,1	29,4	45,9	69,0	163,0	163,0	212,0	295,0
2	16,2	27,0	27,0	41,6	64,9	97,5	231,0	231,0	300,0	417,0
3	19,9	33,0	33,0	50,9	79,5	119,0	283,0	283,0	368,0	511,0
4	22,9	38,1	38,1	58,7	91,8	138,0	326,0	326,0	424,0	590,0
5	25,7	42,6	42,6	65,5	102,0	154,0	365,0	365,0	474,0	660,0
6	28,1	46,7	46,7	72,0	112,0	169,0	400,0	400,0	520,0	723,0
7	30,4	50,4	50,4	77,7	121,0	182,0	432,0	432,0	562,0	781,0
8	32,5	53,9	53,9	83,1	130,0	195,0	461,0	461,0	600,0	835,0
9	34,4	57,2	57,2	88,1	138,0	207,0	490,0	490,0	637,0	885,0
10	36,3	60,3	60,3	92,9	145,0	218,0	516,0	516,0	671,0	933,0
11	38,0	63,2	63,2	97,4	152,0	229,0	540,0	540,0	703,0	977,0
12	39,7	66,0	66,0	102,0	159,0	239,0	565,0	565,0	735,0	1022,0
13	41,4	68,7	68,7	106,0	165,0	249,0	587,0	587,0	764,0	1062,0
14	42,9	71,3	71,3	110,0	172,0	258,0	611,0	611,0	794,0	1104,0
16	45,9	76,3	76,3	117,0	184,0	276,0	653,0	653,0	849,0	1181,0
18	48,7	80,9	80,9	125,0	195,0	293,0	692,0	692,0	900,0	1252,0
19	49,9	82,9	82,9	128,0	200,0	300,0	710,0	710,0	923,0	1284,0
20	51,3	85,3	85,3	131,0	205,0	308,0	730,0	730,0	949,0	1320,0
21	52,6	87,4	87,4	135,0	210,0	316,0	748,0	748,0	973,0	1350,0
24	56,2	93,4	93,4	144,0	225,0	338,0	800,0	800,0	1040,0	1443,0
25	57,4	95,3	95,3	147,0	229,0	345,0			1059,0	1473,0
26	58,5	97,2	97,2	150,0	234,0	352,0			1080,0	1502,0
27	59,6	99,0	99,0	153,0	238,0	358,0			1100,0	
28	60,7	101,0	101,0	155,0	243,0	365,0				
30	62,9	104,0	104,0	161,0	251,0					
32	64,8	108,0	108,0	166,0	259,0					
34	66,9	111,0	111,0	171,0	268,0					

Spring ranges: Standard design

	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	6"x8"	6"x10"
(psig)	15 - 22	15 - 22	15 - 22	15 - 22	15 - 22	15 - 22	15 - 16	15 - 22
(psig)	23 - 29	23 - 29	23 - 29	23 - 29	23 - 29	23 - 29	17 - 22	23 - 27
(psig)	30 - 39	30 - 39	30 - 39	30 - 39	30 - 39	30 - 36	23 - 27	28 - 33
(psig)	40 - 53	40 - 53	40 - 53	40 - 53	40 - 53	37 - 44	28 - 36	34 - 39
(psig)	54 - 73	54 - 73	54 - 73	54 - 73	54 - 73	45 - 53	37 - 43	40 - 48
(psig)	74 - 131	74 - 131	74 - 131	74 - 131	74 - 131	54 - 73	44 - 58	49 - 59
(psig)	132 - 232	132 - 232	132 - 232	132 - 232	132 - 232	74 - 131	59 - 83	60 - 80
(psig)	233 - 319	233 - 319	233 - 319	233 - 319	233 - 319	132 - 203	84 - 119	81 - 107
(psig)	320 - 406	320 - 406	320 - 406	320 - 406	320 - 406	204 - 276	120 - 174	108 - 160
(psig)	407 - 493	407 - 493	407 - 493	407 - 493			175 - 246	161 - 232
(psig)							247 - 348	233 - 305
(psig)							349 - 392	

	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	6"x8"	6"x10"
(barg)	0,2 - 0,5	0,2 - 0,5	0,2 - 0,5	0,2 - 0,5	0,2 - 0,5	0,2 - 0,5	0,2 - 0,4	0,2 - 0,5
(barg)	0,52 - 1	0,52 - 1	0,52 - 1	0,52 - 1	0,52 - 1	0,52 - 1	0,42 - 0,75	0,52 - 1
(barg)	1,05 - 1,5	1,05 - 1,5	1,05 - 1,5	1,05 - 1,5	1,05 - 1,5	1,05 - 1,5	0,77 - 1,1	1,05 - 1,5
(barg)	1,55 - 2	1,55 - 2	1,55 - 2	1,55 - 2	1,55 - 2	1,55 - 2	1,15 - 1,5	1,55 - 1,9
(barg)	2,05 - 2,7	2,05 - 2,7	2,05 - 2,7	2,05 - 2,7	2,05 - 2,7	2,05 - 2,5	1,55 - 1,9	1,95 - 2,3
(barg)	2,75 - 3,6	2,75 - 3,6	2,75 - 3,6	2,75 - 3,6	2,75 - 3,6	2,55 - 3	1,95 - 2,5	2,35 - 2,7
(barg)	3,7 - 5	3,7 - 5	3,7 - 5	3,7 - 5	3,7 - 5	3,05 - 3,6	2,55 - 2,95	2,75 - 3,3
(barg)	5,1 - 9	5,1 - 9	5,1 - 9	5,1 - 9	5,1 - 9	3,7 - 5	3 - 4	3,35 - 4,1
(barg)	9,1 - 16	9,1 - 16	9,1 - 16	9,1 - 16	9,1 - 16	5,1 - 9	4,1 - 5,7	4,2 - 5,5
(barg)	16,1 - 22	16,1 - 22	16,1 - 22	16,1 - 22	16,1 - 22	9,1 - 14	5,8 - 8,2	5,6 - 7,4
(barg)	22,1 - 28	22,1 - 28	22,1 - 28	22,1 - 28	22,1 - 28	14,1 - 19	8,3 - 12	7,5 - 11
(barg)	28,1 - 34	28,1 - 34	28,1 - 34	28,1 - 34		19,1 - 24	12,1 - 17	11,1 - 16
(barg)							17,1 - 24	16,1 - 21
(barg)							24,1 - 27	21,1 - 26

Spring ranges: Bellow design

	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"
(psig)	36 - 48	36 - 46	38 - 53	41 - 49	36 - 54	36 - 51
(psig)	49 - 67	47 - 58	54 - 66	50 - 66	55 - 67	52 - 61
(psig)	68 - 79	59 - 80	67 - 81	67 - 122	68 - 86	62 - 72
(psig)	80 - 102	81 - 93	82 - 108	123 - 145	87 - 116	73 - 81
(psig)	103 - 131	94 - 115	109 - 145	146 - 167	117 - 145	82 - 102
(psig)	132 - 170	116 - 167	146 - 181	168 - 232	146 - 261	103 - 116
(psig)	171 - 232	168 - 268	182 - 232	233 - 268		117 - 135
(psig)	233 - 319	269 - 363	233 - 319	269 - 334		136 - 167
(psig)	320 - 435					168 - 189

	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"
(barg)	2,5 - 3,3	2,5 - 3,2	2,6 - 3,6	2,8 - 3,4	2,5 - 3,7	2,5 - 3,5
(barg)	3,4 - 4,6	3,3 - 4,0	3,7 - 4,5	3,5 - 4,5	3,8 - 4,6	3,6 - 4,2
(barg)	4,7 - 5,4	4,1 - 5,5	4,6 - 5,6	4,6 - 8,4	4,7 - 5,9	4,3 - 4,9
(barg)	5,5 - 7,0	5,6 - 6,4	5,7 - 7,5	8,5 - 10,0	6,0 - 8,0	5,0 - 5,6
(barg)	7,1 - 9,0	6,5 - 7,9	7,6 - 10,0	10,1 - 11,5	8,1 - 10,0	5,7 - 7,0
(barg)	9,1 - 11,7	8,0 - 11,5	10,1 - 12,5	11,6 - 16,0	10,1 - 18,0	7,1 - 8,0
(barg)	11,8 - 16,0	11,6 - 18,5	12,6 - 16,0	16,1 - 18,5		8,1 - 9,3
(barg)	16,1 - 22,0	18,6 - 25,0	16,1 - 22,0	18,6 - 23,0		9,4 - 11,5
(barg)	22,1 - 30,0					11,6 - 13,0

Design with bellow as standard valve (only Fig. 901/911)

	SAFE Fig. 900
	Fig. 901-912
ASME Code Section VIII-Division 1 (UV-stamp, NB-stamp) USA	X
Canada Registration - CRN (only version with UV-stamp)	X
VdTÜV (Germany) (only version without UV-stamp)	X
Pressure equipment directive PED 97/23/EG Module H1, B+D	X

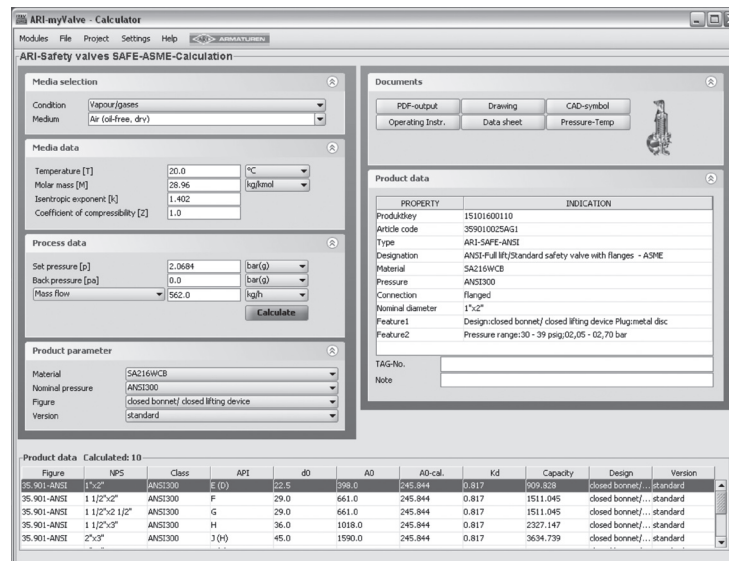
Seat tightness acc. to manufacturers standard better than API 527

Certified coefficient of discharge K UV/NB-stamp

K	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	6"x8"	6"x10"	
Steam / Gas	<30 psig: 0,769 / ≥ 30 psig: 0,817								
Liquid	> 15 psig: 0,615 (Slope)							> 15 psig: 0,545	

Certified coefficient of discharge Kdr VdTÜV (without UV/NB-stamp) (Values for D/G variable: 1" - 4" < 3,5 bar, 6" < 4,0 bar)

Kdr	1"x2"	1 1/2"x2" 1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	6"x8"	6"x10"
Steam / Gas	0,74						0,70	
Liquid	0,54			0,48			0,45	



MyValve - Calculator

Contents:

Module ARI-Safety valves SAFE-ASME-Calculation

- Sizing (calculation of valve-size with given capacity)
- Calculation acc. to ASME VIII, API520

Media:

Integrated media-databank (more than 160 media) with conditions:

- Vapours / gases
- Steam (saturated and superheated)
- Liquids

Special features:

- Project administration of the calculation and product data incl. spare part drawings concerning to project and tag number
- Direct output of calculation and product data in PDF format
- Product data could be taken for a direct order
- SI- and ANSI-units with direct conversion to another databank
- Settings with over pressure or absolute pressure
- All ARI safety valves are integrated in a databank
- Direct access concerning to the product on data sheets, operating instructions, pressure-temperature-diagram and spare part drawings
- Operation in company networks possible (no complex installations on individually PC's necessary)

System Requirements:

Windows operating systems, Linux, etc.

Standard-flange dimensions

Nominal diameter		(inch)	1"x2"	1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
API-orifice letter			(D) E (D) E F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R	
ØD1	ANSI150	(inch)	4,25	5	5	5	6	7,5	9		11	11
	ANSI300	(inch)	4,88	6,12	6,12	6,12	6,5	8,25	10		12,5	12,5
ØD2	ANSI150	(inch)	6	6	7	7,5	7,5	9	11		13,5	16
b1	ANSI150	(inch)	0,69	0,81	0,81	0,81	0,88	1,12	1,25		1,44	1,44
	ANSI300	(inch)	0,69	0,81	0,81	0,81	0,88	1,12	1,25		1,44	1,44
b2	ANSI150	(inch)	0,75	0,75	0,88	0,94	0,94	0,94	1		1,12	1,19

Nominal diameter		(inch)	1"x2"	1 1/2"x2"	1 1/2"x2 1/2"	1 1/2"x3"	2"x3"	3"x4"	4"x6"	4"x6"	6"x8"	6"x10"
API-orifice letter			(D) E (D) E F	G	H	(H) J	(K) L	(L) M	(N) P	Q	R	
ØD1	ANSI150	(mm)	108	127	127	127	153	191	229		280	280
	ANSI300	(mm)	124	156	156	156	165	210	254		318	318
ØD2	ANSI150	(mm)	153	153	178	191	191	229	280		343	407
b1	ANSI150	(mm)	17,5	20,6	20,6	20,6	22,3	28,6	31,8		36,5	36,5
	ANSI300	(mm)	17,5	20,6	20,6	20,6	22,3	28,6	31,8		36,5	36,5
b2	ANSI150	(mm)	19,1	19,1	22,3	23,8	23,8	23,8	25,4		28,6	30,2

Flanges acc. to ASME / ANSI B16.5

Standard-Flangeholes

Nominal diameter		(inch)	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"
ØK	ANSI150	(inch)	3,12	3,88	4,75	5,5	6	7,5	9,5	11,75	14,25
n x Ød		(inch)	4 x 0,62	4 x 0,62	4 x 0,75	4 x 0,75	4 x 0,75	8 x 0,75	8 x 0,88	8 x 0,88	12 x 1
ØK	ANSI300	(inch)	3,5	4,5	5,0	--	6,62	7,88	10,62	--	--
n x Ød		(inch)	4 x 0,75	4 x 0,88	8 x 0,75	--	8 x 0,88	8 x 0,88	12 x 0,88	--	--

Nominal diameter		(inch)	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"
ØK	ANSI150	(mm)	79	98	120,5	140	152,5	190,5	241,5	298,5	362
n x Ød		(mm)	4 x 16	4 x 16	4 x 19	4 x 19	4 x 19	8 x 19	8 x 22	8 x 22	12 x 25
ØK	ANSI300	(mm)	89	114,5	127	--	168	200	270	--	--
n x Ød		(mm)	4 x 19	4 x 22	8 x 19	--	8 x 22	8 x 22	12 x 22	--	--

Pressure-temperature-ratings acc. to ANSI

Material	Nominal pressure		-20°F to 100°F	200°F	300°F	400°F	500°F	600°F	650°F	700°F	750°F	800°F
SA216WCB	ANSI150	psi	285	260	230	200	170	140	125	110	95	80
SA216WCB	ANSI300	psi	740	675	655	635	600	570	550	530	505	410

Material	Nominal pressure		-29°C to 38°C	93°C	149°C	204°C	260°C	315°C	343°C	371°C	399°C	427°C
SA216WCB	ANSI150	bar	19,6	17,9	15,8	13,8	11,7	9,6	8,6	7,6	6,6	5,5
SA216WCB	ANSI300	bar	51,1	46,6	45,2	43,8	41,4	39,3	37,9	36,6	34,8	28,3

Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart.

Soft sealing disc: WEDI

EPDM -31 °F to +302 °F / -35 °C to +150 °C

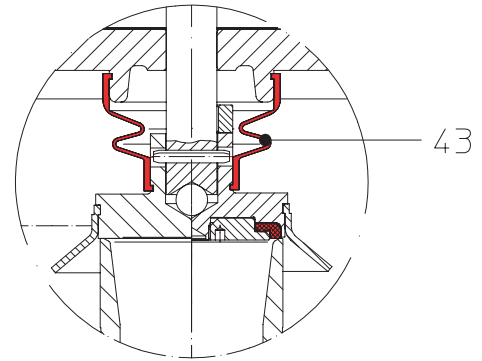
Viton (FPM) -13 °F to +356 °F / -25 °C to +180 °C

Neoprene (CR) -22 °F to +257 °F / -30 °C to +125 °C

Abbreviation E

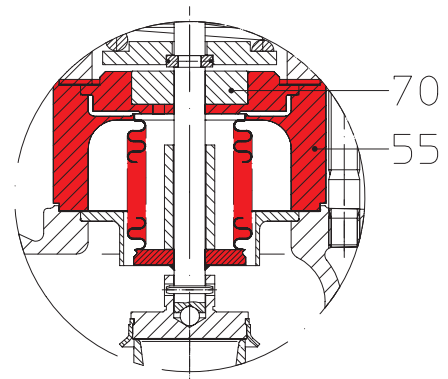
Abbreviation V

Abbreviation N



Bellows seal EPDM (max. +248 °F / +120 °C)

 Disc: Metal sealing
 or soft sealing

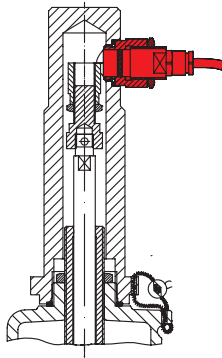
Soft sealing disc WEDI / Bellows seal EPDM

Bellow design (Stainless steel)

(Test: german TA-Luft TÜV-Test No. 922-960324)

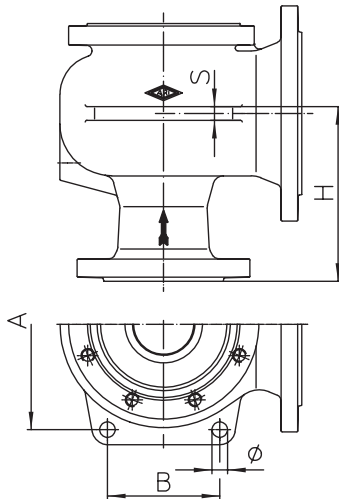
Balanced stainless steel-bellow with balanced piston (Only for closed version!)

Parts

Pos.	Description	
43	Bellow (optional)	EPDM
55	Bellow unit (optional)	SA 240 Gr. 316 Ti / SA 479 Gr. 316 Ti
70	Balanced piston (optional)	SA 240 Gr. 316 Ti

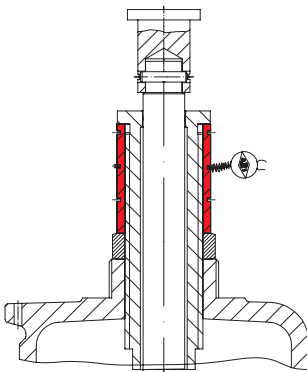


Proximity switch

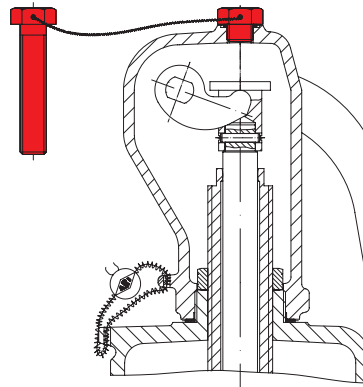


Body material	Nominal diameter	A	B	Ø	S	H
SA216WCB	2" x 3"	7	2 3/4	9/16	7/16	5 5/8
	3" x 4"	8 3/8	3 1/2	3/4	9/16	6 3/8
	4" x 6"	11 5/8	6 1/2	7/8	5/8	7 5/16
	6" x 8"	12 1/2	7 1/4	7/8	13/16	9 3/4
	6" x 10"	14 1/8	7 7/8	7/8	13/16	9 7/8

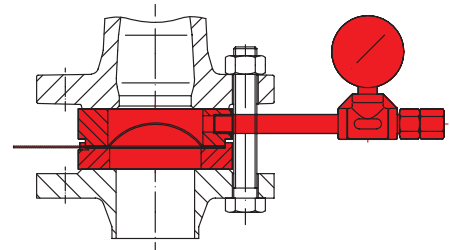
Support tongues



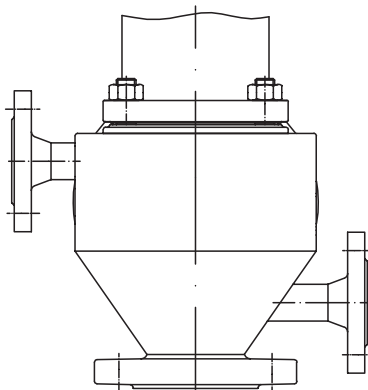
Lock bushing



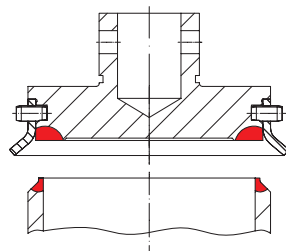
Test gag



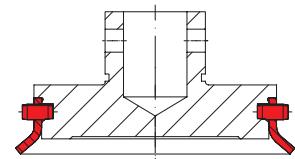
Rupture disc



Heating jacket



Seat SA479Gr.316Ti / Stellit No. 21
Disc SA479Gr.316Ti / Stellit No. 6
and removable lifting aid



Removable lifting aid Chemical-version SA479Gr.316Ti