Niezgodka GmbH

Hamburg

NL Armaturen

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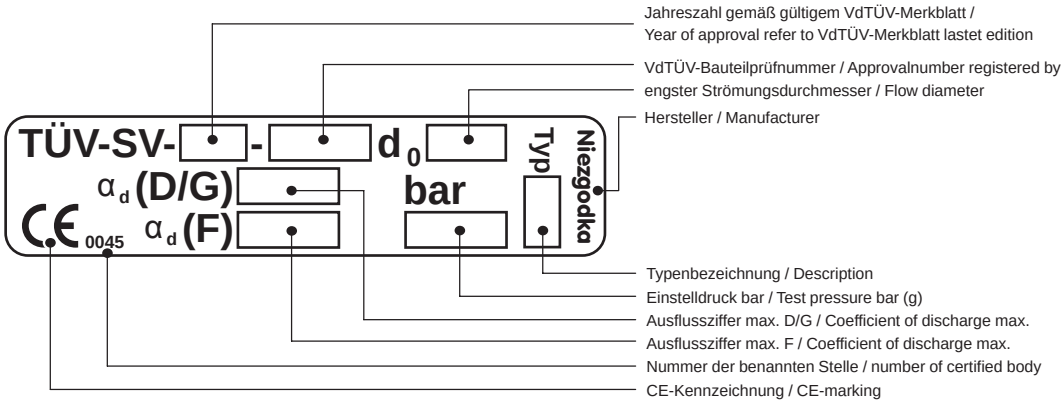
Bauteilprüfzeichen der Sicherheitsventile mit Gewinde- und Flanschanschluss

Type approval mark of safety vales with screwed- and flanged connection

Kennzeichnung gemäß Druckgeräterichtlinie 97/23/EG /
Marking acc. to pressure equipment directive 97/23/EG



Typ Type	Eintritt DN Inlet DN		VdTÜV-Bauteilprüfnummer approvalnumber registered by VdTÜV	* d 0 = mm		Medium fluid geeignet für suited for	Ausflussziffer coefficient of discharge α d max. (D/G)	 α d .... (F)	zulässiger Druck admissible set pressure min. [bar(g)]	 max. [bar(g)]
6	½	1	604	13	22	D/G	0,70		0,03	10
7	50	125	725	40	110	D/G	0,63	0,68	0,05	3,8
10		1¼	847 / 878	8	18	D/G/F	0,42	0,30	0,05	200
19	¾	1½	940	12,5	25	D/G/F	0,75	0,53	0,05	100
21	1		1036	12,5		F	-	0,14	-	250
30	15	100	713/820/896/902	12,5	100	D/G/F	0,45	0,41	0,05	40
31	15	80	713/820/896/902	12,5	60	D/G/F	0,46	0,33	0,05	40
32	15	65	920	10	50	D/G/F	0,57	0,59	0,01	40
35	15	80		12,5	50	D/G/F			0,02	16
66	¼	2	809	7	19	D/G/F	0,82	0,59	0,05	35
67	1		885	19		D/G	0,26	0,35	0,05	3
69	¾	2	935	20	35	F/K/S	0,77		0,20	5,7
98	1		1066	19		D/G	0,14	0,15	0,25	0,34
110		2	1050 / 990	8	27	D/G	0,47		0,03	84

Medium / fluid

- Dämpfe / steam	- D -
- Gase / gases	- G -
- Flüssigkeiten / liquids	- F -
- Dämpfe, Gase / steam, gases	- D/G -
- Dämpfe, Gase,Flüssigkeiten / steam, gases, liquids	- D/G/F -
- flüssige, körnige oder staubförmige Güter / liquids, granular or dusty products	- F/K/S -

* engster Strömungsdurchmesser / flow diameter
Technischen Daten siehe Typ (Register 3 - 14) / specification see type (register 3 - 14)

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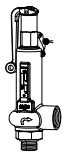
Gewinde-Sicherheits- / Entlastungsventile, in Eckform
Thread Safety- / Relief-Valves, right angle



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Ventil Valve	Verwendung Use	Medium	*	DN_E	PN_E bar	Köpfe Heads
Typ 1	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded mit geschlossener Federhaube, mit Sonderausführung in closed completion, with spezial equipment z.B. Faltenbalg / example bellow unit	D/G/F	-	3/8 - 2	500	A - T
Typ 5	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	-	1/4 - 3/8	200	C, D
Typ 10	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	B	3/8 - 1¼	500	A - C, H, T
Typ 18	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded mit geschlossener Federhaube, erweiterter Durchsatz in closed completion, higher discharge capacity	D/G/F	-	3/8 - 1¼	200	A - T
Typ 19	Vollhub-Sicherheitsventil, federbelastet Full-lift-Safety-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	B	3/8 - 1½	130	A, C, H, T
Typ 21	Entlastungsventil, federbelastet Relief-Valve, springloaded mit geschlossener Federhaube, für hohe Drücke in closed completion, high pressure	D/G/F F	- B	3/4 - 1 1	1100 250	C C

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

* Bauteilgeprüft / TÜV-Approval..... - B -

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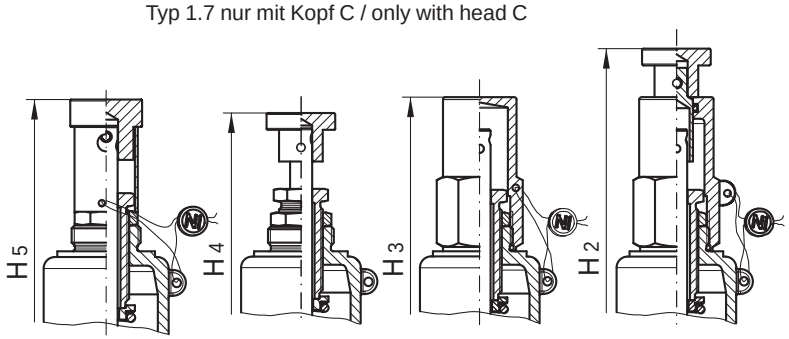
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 1

Typ 1.1 : Wst. / Material 1.4104, 0.7043
Typ 1.2 : Wst. / Material 1.4571, 1.4581
Typ 1.7 : Wst. / Material 1.4571, 1.4308

Typ 1.7 nur mit Kopf C / only with head C

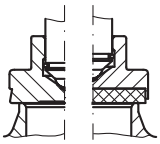


Kopf E / head E
gestützter Lüfteknopf
nicht gasdicht
supported lift. button
not gastight

Kopf D / head D
Lüfteknopf
nicht gasdicht
lifting button
not gastight

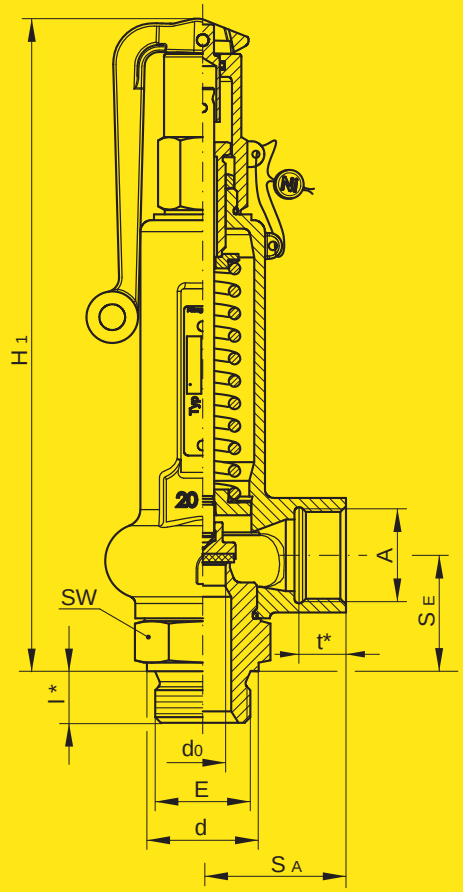
Kopf C / head C
gasdichte Kappe
gastight cap

Kopf B / head B
gasdicht mit
Lüfteknopf
gastight with lifting
button



metall. dicht
metal seated

weich dicht
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 1.1: -10°C bis / to 280°C / (350°C[1])
Typ 1.2: -60°C bis / to 280°C / (400°C[1])
Typ 1.7: -200°C bis / to 280°C / (300°C[1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet				Austritt Outlet			Baumaße Dimensions							Ansprechdruck Set pressure		Gewicht Weight
	E	SE	d	l*	A	SA	t*	H1	H2	H3	H4	H5	SW	d0	p min	p max	
	G/NPT	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	3/8	34	22	12	1/2 oder / or 3/4	40	14 oder / or 17	200	205	185	180	180	32	10 8	0,1 50	140 250**	1,0
	1/2		26	14										12,5 10 8 6 [2]	0,1 0,1 50 120	120 140 250** 500	
	3/4		32	16										16 12,5 10 8 6 [2]	0,1 0,1 0,1 50 120	50 120 140 250** 500	
II	1/2	40	26	14	1	50	18	230	235	215	210	210	41	12,5 8	0,1 50	170 350**	1,6
	3/4		32	16										16 12,5 8	0,1 50 50	90 170 350**	
	1		39	18										20 16 12,5 8	0,1 0,1 50 50	20 90 170 350**	
	1¼		49	20									50	22 20 16	0,05 0,1 0,1	55 20 90	1,8
	1½		55	20									55	27	0,05	45	
	2		60	20									60	27	0,05	45	

* Maß l und t bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l and t for NPT-design according to ANSI B 2.1

** Typ 1.1 nur bis 200 / type 1.1 only to 200

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 1

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [kg/h] / water at 68°F [kg/h]

	Baugröße I / Size I				Baugröße II / Size II						
Eintr. / Inlet	3/8, 1/2, 3/4	3/8	1/2, 3/4	3/4	1/2, 3/4, 1	1/2, 3/4, 1	3/4, 1, 1¼	1 , 1¼	1¼	1½ , 2	Eintr. / Inlet
d_O / mm	8	10	12,5	16	8	12,5	16	20	22	27	d_O / mm
α_d, max	0,05										α_d, max
p_e / [bar(g)]											p_e / [bar(g)]
0,05								145	216	325	0,05
0,1		63	99	161		99	161	204	305	460	0,1
0,4		126	197	323		197	323	409	611	921	0,4
0,5		141	220	361		220	361	457	683	1030	0,5
1,0		200	312	511		312	511	647	966	1450	1,0
1,5		244	382	626		382	626	792	1180	1780	1,5
2		282	441	723		441	723	915	1370	2060	2
3		346	540	885		540	885	1120	1670	2520	3
4		399	624	1020		624	1020	1290	1930	2910	4
6		489	764	1250		764	1250	1580	2370	3560	6
8		565	882	1440		882	1440	1830	2730	4120	8
10		631	987	1610		987	1610	2040	3050	4600	10
15		773	1210	1980		1210	1980	2500	3740	5640	15
20		893	1390	2280		1390	2280	2890	4320	6510	20
25		998	1560	2550		1560	2550	3230	4830	7280	25
30		1090	1710	2800		1710	2800	3540	5290	7970	30
35		1180	1840	3020		1840	3020	3830	5720	8610	35
40		1260	1970	3230		1970	3230	4090	6110	9210	40
45		1340	2090	3430		2090	3430	4340	6480	9770	45
50	904	1410	2200	3610	904	2200	3610	4570	6830		50
60	990	1550	2420		990	2420	3960	5010	7490		60
70	1070	1670	2610		1070	2610	4280	5410			70
80	1140	1780	2790		1140	2790	4570				80
90	1210	1890	2960		1210	2960	4850				90
100	1280	2000	3120		1280	3120					100
110	1340	2090	3270		1340	3270					110
120	1400	2190			1400	3420					120
130	1460	2280			1460	3560					130
140	1510	2360			1510	3690					140
150	1560	2440			1560	3820					150
160	1610				1610	3950					160
170	1660				1660	4070					170
180	1710				1710						180
190	1760				1760						190
200	1810				1810						200
220	1890				1890						220
240	1980				1980						240
260	2060				2060						260
280					2140						280
300					2210						300
320					2280						320
340					2360						340
350					2390						350

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01'06

distributed by ROBINEX AG SA

Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 1

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

	Baugröße I / Size I				Baugröße II / Size II						
Eintr. / Inlet	3/8, 1/2, 3/4	3/8	1/2, 3/4	3/4	1/2, 3/4, 1	1/2, 3/4, 1	3/4, 1, 1¼	1 , 1¼	1¼	1½ , 2	Eintr. / Inlet
d_O / mm	8	10	12,5	16	8	12,5	16	20	22	27	d_O / mm
α_d, max	0,08										α_d, max
p_e / [bar(g)]											p_e / [bar(g)]
0,4		3,3	5,2	8,4		5,2	8,3	10,2	16,0	24,1	0,4
0,6		4,1	6,6	10,6		6,5	10,4	12,7	20,1	30,3	0,6
0,8		4,9	7,7	12,5		7,7	12,3	14,9	23,7	35,7	0,8
1,0		5,6	8,9	14,4		8,8	14,1	17,1	27,3	41,1	1,0
2		9,4	14,5	24,1		14,4	23,7	29,3	45,6	68,7	2
3		13,3	20,7	34,0		20,7	34,0	43,0	64,3	96,8	3
4		16,5	25,7	42,2		25,7	42,2	53,4	79,8	120	4
5		19,7	30,7	50,3		30,7	50,3	63,7	95,2	143	5
6		22,8	35,7	58,5		35,7	58,5	74,0	110	166	6
7		26,0	40,6	66,6		40,6	66,6	84,3	126	189	7
8		29,2	45,6	74,7		45,6	74,7	94,5	141	212	8
9		32,3	50,5	82,7		50,5	82,7	105	156	235	9
10		35,4	55,4	90,8		55,4	90,8	115	171	258	10
15		51,1	79,9	131		79,9	131	166	247	373	15
20		66,8	104	171		104	171	216	323	487	20
25		82,5	129	211		129	211	267	399	601	25
30		98,2	153	251		153	251	318	475	716	30
35		114	178	292		178	292	369	551	831	35
40		130	203	332		203	332	420	628	946	40
45		146	228	373		228	373	472	705	1060	45
50	103	162	253	414	103	253	414	524	783		50
60	124	194	303		124	303	497	630	940		60
70	147	229	358		147	358	587	743			70
80	167	261	408		167	408	668				80
90	189	295	462		189	462	756				90
100	212	331	517		212	517					100
110	235	367	573		235	573					110
120	259	404			259	632					120
130	284	443			284	693					130
140	309	484			309	756					140
150	337	527			337	824					150
160	367				367	896					160
170	399				399	974					170
180	434				434						180
190	472				472						190
200	517				517						200

auf Anfrage / on request

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Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 1

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

	Baugröße I / Size I				Baugröße II / Size II						
Eintr. / Inlet	3/8, 1/2, 3/4	3/8	1/2, 3/4	3/4	1/2, 3/4, 1	1/2, 3/4, 1	3/4, 1, 1¼	1 , 1¼	1¼	1½ , 2	Eintr. / Inlet
d_O / mm	8	10	12,5	16	8	12,5	16	20	22	27	d_O / mm
α_d, max	0,08										α_d, max
p_e / [bar(g)]											p_e / [bar(g)]
0,05								4,0	6,1	9,2	0,05
0,1		1,8	2,9	4,6		2,9	4,6	5,8	8,8	13,3	0,1
0,4		4,0	6,3	10,2		6,3	10,1	12,3	19,4	29,2	0,4
0,5		4,6	7,3	11,7		7,2	11,6	14,1	22,2	33,4	0,5
1,0		7,1	11,2	18,3		11,1	17,9	21,7	34,6	52,1	1,0
1,5		9,6	14,9	24,6		14,8	24,1	29,4	46,5	70,0	1,5
2		12,1	18,6	31,0		18,5	30,4	37,6	58,5	88,2	2
3		17,2	26,9	44,0		26,9	44,0	55,7	83,2	125	3
4		21,5	33,6	55,0		33,6	55,0	69,6	104	156	4
6		30,1	47,0	77,0		47,0	77,0	97,4	145	219	6
8		38,7	60,4	99,0		60,4	99,0	125	187	282	8
10		47,3	73,9	121		73,9	121	153	229	344	10
15		68,8	107	176		107	176	223	333	502	15
20		90,4	141	231		141	231	293	437	659	20
25		112	175	287		175	287	363	542	817	25
30		134	209	342		209	342	433	647	975	30
35		155	243	398		243	398	503	752	1130	35
40		177	277	453		277	453	574	857	1290	40
45		199	311	509		311	509	644	963	1450	45
50	141	221	345	565	141	345	565	715	1070		50
60	169	264	413		169	413	676	856	1280		60
70	197	308	481		197	481	788	997			70
80	225	351	549		225	549	899				80
90	252	395	617		252	617	1010				90
100	280	438	684		280	684					100
110	308	481	752		308	752					110
120	335	524			335	819					120
130	362	566			362	885					130
140	390	609			390	951					140
150	416	651			416	1020					150
160	443				443	1080					160
170	470				470	1140					170
180	496				496						180
190	522				522						190
200	547				547						200
220	598				598						220
240	648				648						240
260					696						260
280					743						280
300					790						300
320					835						320
340					879						340
350					901						350

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Typ 1

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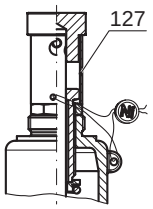
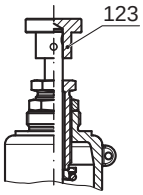
Typ 1.2 : Wst. / Material 1.4571, 1.4581
Typ 1.7 : Wst. / Material 1.4571, 1.4308

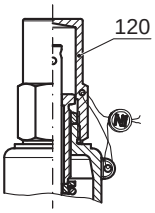
Typ 1.7 nur mit Kopf C / only with head C



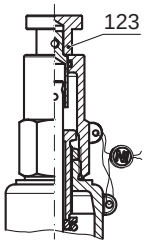
head E
supported lifting button
not gastight



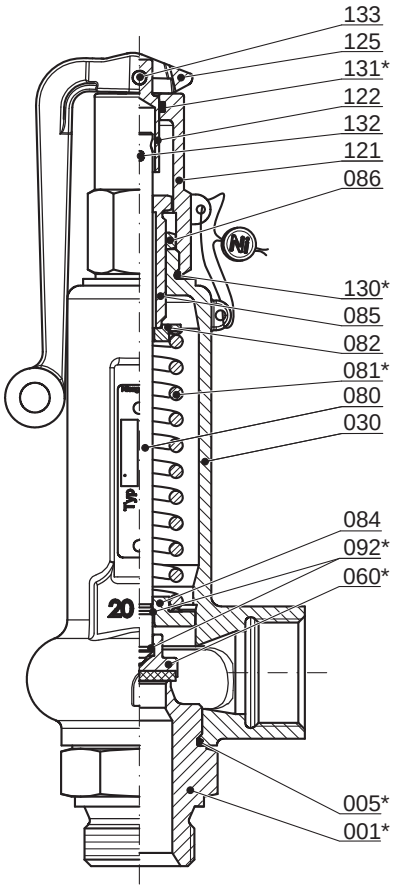
head D
lifting button
not gastight



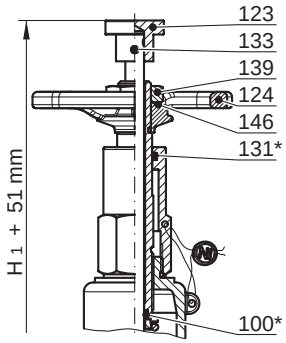
head C
gastight cap



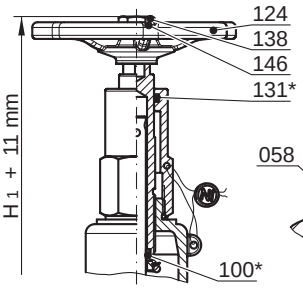
head B
gastight with
lifting button



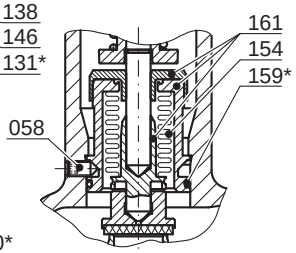
head A
gastight with lifting lever



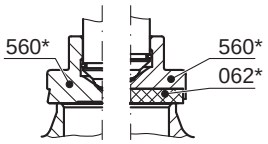
head G [3]
gastight with handwheel
and lifting button, on request



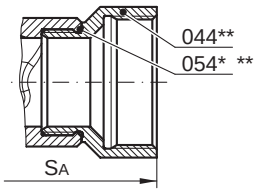
head F [3]
gastight with handwheel
on request



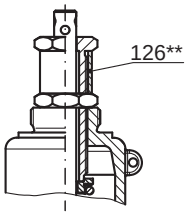
with bellow **
on request, only size II



disc complete, pos. 060*
metal seated soft seated



enlarged outlet
size I : SA = 65 mm
size II: SA = 80 mm



lock sleeve
on request

Item	Description	Material 1.1	1.2	1.7	Item	Description	Material 1.1	1.2	1.7
001*	1 inlet body	1.4104	1.4571	1.4571	130*	1 o-ring	NBR	FPM	EPDM
005*	1 o-ring	NBR	FPM	EPDM	131*	1 o-ring	NBR	FPM	
030	1 spring bonnet	0.7043	1.4581	1.4308	132	1 groove pin	A4	A4	
044**	1 enlarged outlet	1.4104	1.4571	1.4571	133	1 groove pin	A4	A4	
054* **	1 o-ring	NBR	FPM	EPDM					
060*	1 disc, complete					head F and G			
560*	1 disc	1.4571	1.4571	1.4571	100*	1 o-ring (only head G)	NBR	FPM	EPDM
062* [1]	1 soft sealing	see techn. appendic: KWD-1			123	1 lifting button (only head G)	1.4305	1.4305	
080	1 spindel	1.4104	1.4571	1.4571	124	1 handwheel	3.2581	3.2581	
081*	1 spring	1.4310	1.4310	1.4310	138	1 screw (only head F)	A2	A2	
082	1 springplate, upper	1.0718	1.4305	1.4571	139	1 nut (only head G)	A2	A2	
084	1 springplate, lower	1.4104 [2]	1.4571	1.4571	146	1 washer	A2	A2	
085	1 adjusting screw	1.4305	1.4305	1.4571					
086	1 lock nut	1.0718	1.4305	1.4571		on request			
092*	2 lock ring	1.4571	1.4571	1.4571	126**	1 lock sleeve	1.4301	1.4301	
120	1 cap (only head C)	1.0718	1.4581	1.4571					
121	1 lifting cap (only head A+B)	1.4104	1.4581			bellow ** (only size II)			
122	1 coupling	1.4305	1.4305		058	2 screwes pin	A2	A2	
123	1 lifting button	1.4305	1.4305		154	1 bellow	1.4571	1.4571	
125	1 lifting lever	3.2581	3.2581		159*	1 o-ring	NBR	FPM	
127	1 support tube	1.4301	1.4301		161	1 bellow unit (3 items)	1.4571	1.4571	

0207

* expendable parts

[1] only in disc with soft sealing

[3] with handwheel adjustable as a pressure

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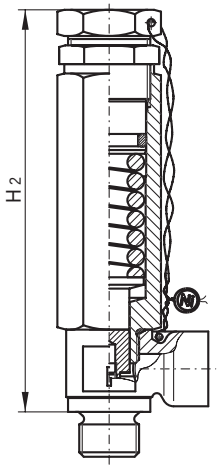
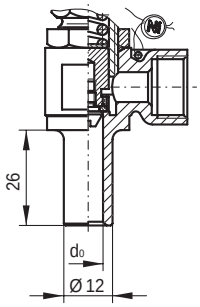
for steam, gases and liquids in closed completion

Typ 5

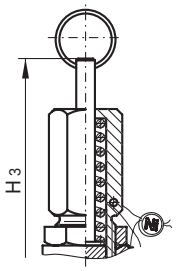
Typ 5.2 : Wst. / Material 1.4581, 1.4571
Typ 5.3 : Wst. / Material 2.0401, 2.0401



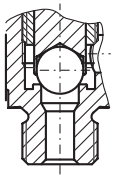
≥ 120 bar(g)
Kopf C, gasdicht, nicht anlüftbar
head C, gastight, not liftable
nur Typ 5.2 / only type 5.2



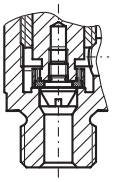
Ermeto EO Ø12
DIN 2353
nur Typ 5.2 / only type 5.2



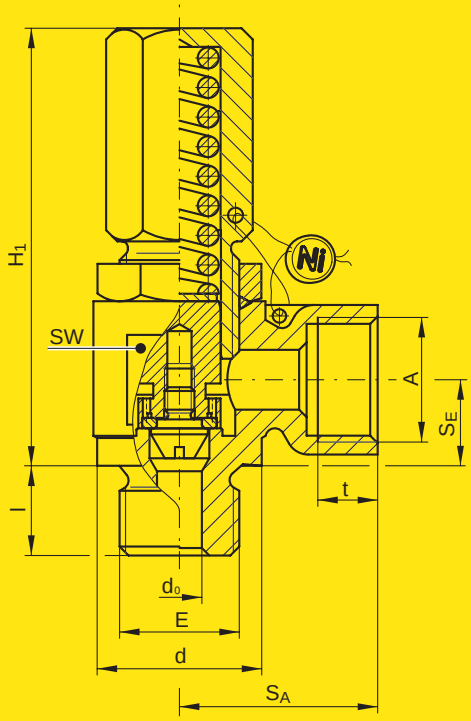
Kopf D / head D
nicht gasdicht, anlüftbar
not gastight, liftable
nur Typ 5.3 / only type 5.3



≤ 2 bar(g)
Kegel mit Kugel
disc with ball



> 2 bar(g)
Kegel mit O-Ring
disc with o-ring



< 120 bar(g)
Kopf C / head C
gasdicht, nicht anlüftbar / gastight, not liftable

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 5.2: -40°C bis / to 130°C
Typ 5.3: -10°C bis / to 130°C

Kegel mit O-Ring / disc with o-ring

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Kegel mit Kugel / disc with ball (max. 2 bar)

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

Typ Type	Eintritt Inlet						Austritt Outlet			Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
	E	d0	Sitz-Ø seat-Ø	SE	d	l	A	SA	t	H1	H2	H3	SW	p min	p max	
		[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
5.2	1/4 G/NPT	6	8	11,5	18	12	G 3/8	26	9,5	55			22	0,4	65	0,15
	3/8 G/NPT				22	12										
	EO Ø 12				22	26										
	1/4 G/NPT	6	6		18	12				55				65	120	0,15
	G 3/8				22	12										
	EO Ø 12				22	26										
	1/4 G/NPT	6	6		18	12					110			120	200	0,2
	G 3/8				22	12										
	EO Ø 12				22	26										
5.3	G 1/4	6	8	11,5	18	12	G 3/8	26	9,5	55		72	22	0,4	65	0,15
	G 3/8				22	12										
	G 3/8	6	6		22	12				55				65	120	0,15

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Typ 5

Massen- bzw. Volumenstromtabelle / Discharge capacities

Medium fluid / p_e [bar (g)]	Wasser (20°C) water [kg/h]	Sattdampf steam [kg/h]	Luft (0°C) air [m^3_n/h]	Kohlendioxid (0°C) carbondioxide [m^3_n/h]
0,4	9,1	0,21	0,26	0,21
0,5	10,1	0,24	0,29	0,23
0,6	11,1	0,26	0,32	0,26
0,8	12,8	0,30	0,38	0,30
1,0	14,4	0,34	0,43	0,35
1,5	17,6	0,45	0,58	0,46
2,0	20,3	0,57	0,73	0,58
2,5	22,7	0,70	0,90	0,72
3,0	24,9	0,84	1,08	0,87
3,5	26,9	0,94	1,22	0,98
4,0	28,7	1,04	1,35	1,09
4,5	30,5	1,14	1,49	1,20
5,0	32,1	1,24	1,62	1,31
6,0	35,2		1,89	1,53
7,0	38,0		2,16	1,76
8,0	40,7		2,44	1,98
9,0	43,1		2,71	2,21
10,0	45,5		2,98	2,44
15,0	55,7		4,34	3,62
20,0	64,3		5,70	4,87
25,0	71,9		7,06	
30,0	78,7		8,42	
35,0	85,1		9,79	
40,0	90,9		11,1	
45,0	96,4		12,5	
50,0	101		13,9	
60,0	111		16,6	
70,0	120		19,4	
80,0	128		22,1	
90,0	136		24,9	
100,0	144		27,6	
110,0	151		30,3	
120,0	157		33,0	
130,0	164		35,7	
140,0	170		38,3	
150,0	176		41,0	
160,0	182		43,6	
170,0	187		46,2	
180,0	193		48,8	
190,0	198		51,4	
200,0	203		53,9	

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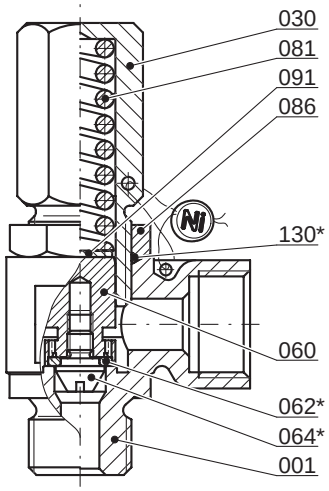
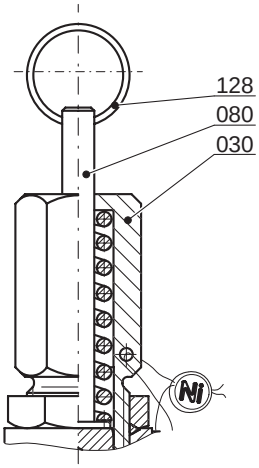
Typ 5

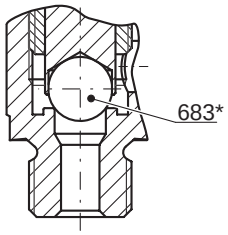
Typ 5.2 : Wst. / Material 1.4581, 1.4571
Typ 5.3 : Wst. / Material 2.0401, 2.0401



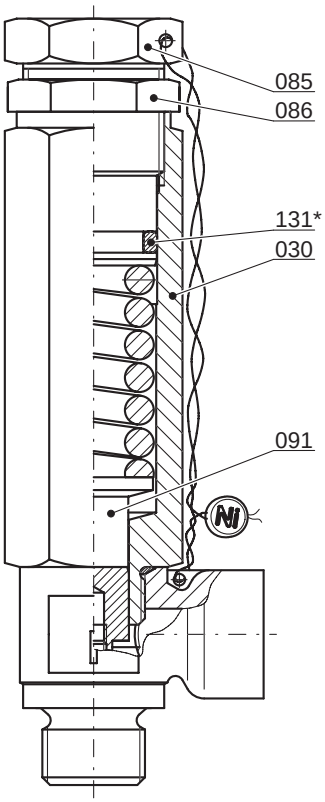
< 120 bar(g)
Kopf C
gasdicht, nicht anlüftbar
head C
gastight, not liftable



Kopf D / head D
nicht gasdicht, anlüftbar
not gastight, liftable
nur Typ 5.3 / only type 5.3



Kegeldichtung mit Kugel, EPDM
bei 0,4 - 2 bar(g)
soft seated ball of EPDM
at 0,4 - 2 bar(g)



≥ 120 bar(g)
Kopf C, gasdicht, nicht anlüftbar
head C, gastight, not liftable
nur Typ 5.2 / only type 5.2

Pos.	Bezeichnung	Werkstoff 5.2	Werkstoff 5.3	Item	Description	Material 5.2	Material 5.3
001	1 Eintrittskörper	1.4581	2.0401	001	1 inlet body	1.4581	2.0401
030	1 Federhaube	1.4571	2.0401	030	1 spring bonnet	1.4571	2.0401
060*	1 Kegel komplett	1.4404	2.0401	060*	1 disc, complete	1.4404	2.0401
062*[1]	1 Kegeldichtung	siehe techn. Anhang: KWD-1		062*[1]	1 soft sealing	see techn. appendix: KWD-1	
683*[2]	1 Kugel	EPDM	EPDM	683*[2]	1 ball	EPDM	EPDM
064*	1 Kegelschraube	1.4404	2.0401	064*	1 disc screw	1.4404	2.0401
081*	1 Feder	1.4571	1.4571	081*	1 spring	1.4571	1.4571
086	1 Gegenmutter	1.4571	2.0401	086	1 lock nut	1.4571	2.0401
091	1 Druckstück	1.4571	2.0401	091	1 pressure piece	1.4571	2.0401
130*	1 O-Ring	FPM	NBR	130*	1 o-ring	FPM	NBR
	≥ 120 [bar(g)]				≥ 120 [bar(g)]		
030	1 Federhaube	1.4571		030	1 spring bonnet	1.4571	
085	1 Druckschraube	1.4571		085	1 adjusting screw	1.4571	
086	1 Gegenmutter	1.4571		086	1 lock nut	1.4571	
091	1 Druckstück	1.4571		091	1 pressure piece	1.4571	
131*	1 O-Ring	FPM		131*	1 o-ring	FPM	
	Kopf D				haed D		
030	1 Federhaube		2.0401	030	1 spring bonnet		2.0401
080	1 Spindel		2.0401	080	1 spindel		2.0401
128	1 Lüftering		vernickelt	128	1 lifting ring		nickel-plated

* Ersatz- bzw. Verschleißteile / expendable parts

[1] bei p > 2 [bar(g)] / at p > 2 [bar(g)]

[2] bei p ≤ 2 [bar(g)] / at p ≤ 2 [bar(g)]

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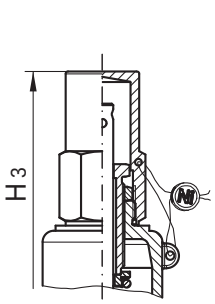
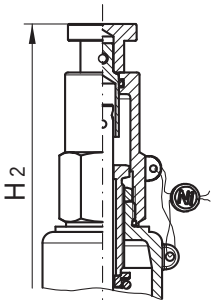
Typ 10

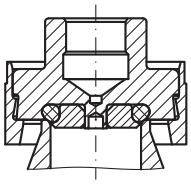
Typ 10.1 : Wst. / Material 1.4104 / 0.7043
Typ 10.2 : Wst. / Material 1.4571 / 1.4581
Typ 10.7 : Wst. / Material 1.4571 / 1.4308
Typ 10.7 nur mit Kopf C / only with head C



Kopf C / head C
gasdichte Kappe
gastight cap

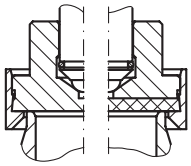


Kopf B / head B
gasdicht mit Lüfteknopf
gastight with lifting button



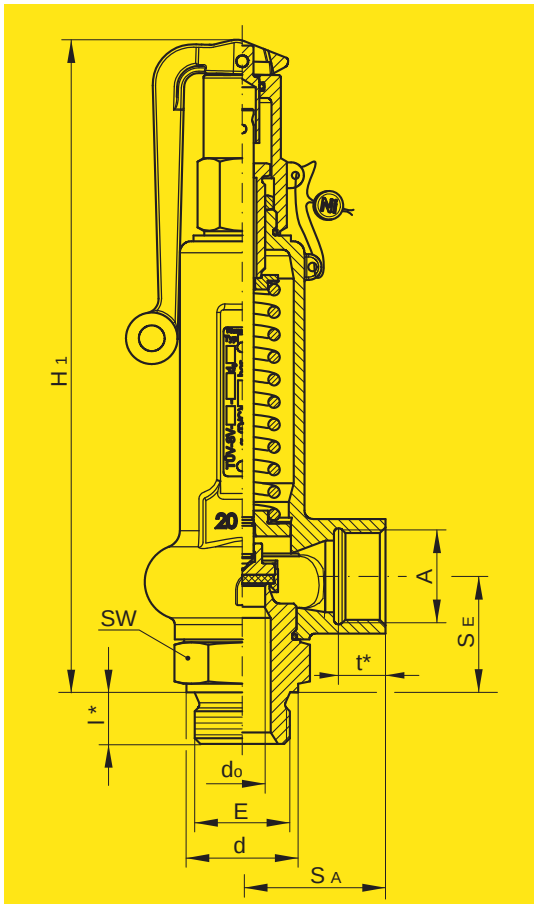
O-Ring-Kegel
für d0 12,5, BG I
0,1 - 60 [bar(g)]

o-ring-disc
for d0 12,5, size I
0,1 - 60 [bar(g)]



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

BG I: TÜV • SV • XX-847 • do • D/G/F • α d • p
BG II: TÜV • SV • XX-878 • do • D/G/F • α d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 10.1: -10°C bis / to 280°C / (350°C[1)])
Typ 10.2: -60°C bis / to 280°C / (400°C[1)])
Typ 10.7: -200°C bis / to 280°C / (300°C[1)])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet				Austritt Outlet			Baumaße Dimensions					Ansprechdruck Set pressure		Gewicht Weight
	E	SE	d	l*	A	SA	t*	H1	H2	H3	SW	d0	pmin	pmax	
	G/NPT	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	3/8	34	22	12	1/2	40	14	200	205	185	32	10	0,1	140	1,0
												8	20	200	
	1/2		26	14	3/4		17					12,5	0,1	70	
												10	0,1	140	
												8	20	200	
					3/4							6 [2) 3)]	120	500	
	3/4		32	16	1/2		14					16 [2)]	0,05	40	
					3/4		17					12,5	0,1	70	
												10	0,1	140	
												8	20	200	
					3/4		17					6 [2) 3)]	120	500	
II	1/2	40	26	14	1	50	18	230	235	215	41	12,5	0,1	70	1,6
	3/4		32	16								16	0,1	32	
												12,5	32	70	
	1		39	18								20	0,1	20	
												16	0,1	32	
												12,5	32	70	
	1¼		49	20							50	20	0,1	20	
												16	0,1	32	

* Maß l und t bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l and t for NPT-design according to ANSI B 2.1

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Typ 10

Massen- bzw. Volumenstromtabelle / Discharge capacities

Baugröße I / Size I															
d_o [mm]	6	8			10			12,5			12,5 O-Ring-Kegel / -disc			16	
Medium / fluid	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	$\alpha_{d\,max}$ 0,61	α_d 0,30	$\alpha_{d\,max}$ 0,42		α_d 0,30	$\alpha_{d\,max}$ 0,38		α_d 0,20	$\alpha_{d\,max}$ 0,27		α_d 0,20	$\alpha_{d\,max}$ 0,24		$\alpha_{d\,max}$ 0,13	
0,05														8,9	11,0
0,1					536,0	11,8	14,8	558,3	12,2	15,4	558,3	12,2	15,4	11,0	13,9
0,2					656,4	14,0	18,4	683,8	14,7	19,3	683,8	14,3	18,8	13,1	17,3
0,3					758,0	15,7	21,5	789,5	16,6	22,8	789,5	16,2	22,2	14,7	20,1
0,4					847,4	17,3	24,5	882,7	18,3	26,0	882,7	17,9	25,4	15,9	22,6
0,5					928,3	18,7	27,4	967,0	19,8	29,0	967,0	19,2	28,2	16,9	24,8
1,0					1256,9	32,7	39,6	1309,3	36,5	44,2	1309,3	33,6	40,6	29,7	35,9
1,5					1539,4	38,8	52,7	1603,6	41,8	56,8	1603,6	39,4	53,4	34,1	46,3
2,0					1777,6	50,9	64,5	1851,6	55,1	69,8	1851,6	50,9	64,5	44,5	56,3
2,5					1987,4	60,1	76,1	2070,2	65,8	83,4	2070,2	59,6	75,5	52,5	66,5
3,0					2177,1	68,5	87,7	2267,8	76,0	97,4	2267,8	67,6	86,6	60,0	76,8
3,5					2351,5	77,2	98,9	2449,5	85,7	109,8	2449,5		97,6	67,6	86,6
4,0					2513,9	85,5	110,1	2618,6	94,9	122,3	2618,6		108,7	74,9	96,5
4,5					2666,4	94,2	121,4	2777,4	104,5	134,7	2777,4		119,8	82,5	106,3
5					2810,6	102,3	132,6	2927,7	113,6	147,2	2927,7		130,8	89,6	116,1
6					3078,8	119,0	155,0	3207,1	132,1	172,1	3207,1		153,0	104,2	135,8
7					3325,5	135,8	177,5	3464,1	150,8	197,0	3464,1		175,1	118,9	155,4
8					3555,5	152,5	199,9	3703,3	169,4	222,0	3703,3		197,3	133,6	175,1
9					3770,8	169,2	222,4	3927,9	187,8	246,9	3927,9		219,5	148,2	194,8
10					3974,8	186,0	244,9	4140,4	206,5	271,9	4140,4		241,7	162,9	214,5
12					4354,1	219,3	289,9	4535,6	243,5	321,9	4535,6		286,1	192,1	253,9
14					4703,0	252,5	335,0	4899,0	280,3	372,0	4899,0		330,6	221,1	293,4
15					4868,0	269,0	357,6	5070,9	298,6	397,0	5070,9		352,9	235,5	313,2
16					5027,7	285,5	380,2	5237,2	316,9	422,1	5237,2		375,2	250,0	333,0
18					5332,7	318,2	425,4	5554,9	353,3	472,3	5554,9		419,8	278,7	372,6

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L 01'06

Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 10

Massen- bzw. Volumenstromtabelle / Discharge capacities

Baugröße I / Size I

do [mm]	6	8			10			12,5			12,5 O-Ring-Kegel / -disc			16	
Medium / fluid	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / pe [bar(g)]	$\alpha_{d\,max}$ 0,61	α_d 0,30	$\alpha_{d\,max}$ 0,42		α_d 0,30	$\alpha_{d\,max}$ 0,38		α_d 0,20	$\alpha_{d\,max}$ 0,27		α_d 0,20	$\alpha_{d\,max}$ 0,24		$\alpha_{d\,max}$ 0,13	
20		3597,5	248,5	333,0	5621,2	351,2	470,7	5855,4	389,9	522,6	5855,4		464,5	307,6	412,2
25		4022,2	307,4	413,2	6284,7	434,6	584,2	6546,5	482,5	648,5	6546,5		576,5	380,6	511,6
30		4406,1	366,2	493,7	6884,5	517,7	698,0	7171,3	574,7	774,9	7171,3		688,8	453,4	611,3
35		4759,1	425,0	574,5	7436,1	600,8	812,2	7745,9	667,0	901,7	7745,9		801,5	526,1	711,3
40		5087,7	483,6	655,6	7949,5	683,7	926,8	8280,8	759,0	1028,9	8280,8		914,6	598,8	811,7
45		5396,3	542,7	736,9	8431,7	767,2	1041,8	8783,1	851,8	1156,6	8783,1		1028,1		
50		5688,2	602,1	818,5	8887,8	851,2	1157,1	9258,2	945,0	1284,6	9258,2		1141,9		
60		6231,1	722,2	982,6	9736,1	1020,9	1389,0	10141,8	1133,4	1542,1	10141,8		1370,8		
70		6730,4	843,3	1147,7	10516,2	1192,2	1622,5	10954,4	1323,5	1801,3					
80		7195,1	967,8	1314,0	11242,3	1368,1	1857,6								
90		7631,5	1095,7	1481,5	11924,3	1549,0	2094,4								
100		8044,4	1224,5	1650,1	12569,3	1731,0	2332,8								
110		8437,0	1354,3	1820,0	13182,8	1914,6	2572,9								
120	1626,6	8812,1	1485,8	1991,0	13769,0	2100,4	2814,7								
130	1767,3	9172,0	1618,9	2163,3	14331,2	2288,7	3058,2								
140	1909,1	9518,2	1753,8	2336,8	14872,2	2479,3	3303,6								
150	2051,9	9852,3	1896,5	2511,6											
175	2413,6	10641,7		2954,4											
200	2782,2	11376,4		3405,5											
250	3541,2														
300	4331,6														
350	5156,2														
400	6018,6														
450	6922,6														
500	7872,8														

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Standard-Safety-Valve, springloaded

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Typ 10

Massen- bzw. Volumenstromtabelle / Discharge capacities

Baugröße II / Size II									
d_o [mm]	12,5			16			20		
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	α_d 0,29	$\alpha_{d\,max}$ 0,37		α_d 0,23	$\alpha_{d\,max}$ 0,29		α_d 0,08	$\alpha_{d\,max}$ 0,11	
0,1	809,5	17,7	22,4	1051,9	23,1	29,1	571,7	12,5	15,8
0,2	991,5	21,8	28,6	1288,3	28,0	36,9	700,2	15,8	20,7
0,4	1280,0	27,8	39,5	1663,2	35,3	50,0	903,9	20,5	29,1
0,5	1402,1	30,2	44,3	1822,0	38,1	55,9	990,2	22,3	32,7
1,0	1898,5	52,4	63,4	2466,9	66,8	80,7	1340,7	40,4	48,8
1,5	2325,2	60,0	81,5	3021,4	76,8	104,3	1642,0	45,8	62,1
2	2684,9	78,0	98,9	3488,8	100,0	126,8	1896,1	59,7	75,7
3	3288,3	104,2	133,5	4272,9	133,8	171,4	2322,2	79,3	101,6
4	3797,0	130,0	167,6	4933,9	167,0	215,2	2681,5	99,0	127,5
6	4650,3	181,0	235,8	6042,7	232,4	302,8	3284,1	137,7	179,5
8	5369,7	232,1	304,2	6977,5	298,0	390,6	3792,1	176,6	231,5
10	6003,5	282,9	372,6	7801,1	363,3	478,5	4239,7	215,3	283,6
15	7352,8	409,2	544,0	9554,4	525,5	698,6	5192,6	311,4	414,0
20	8490,3	534,4	716,1	11032,5	686,2	919,6	5995,9	406,7	545,0
25	9492,4	661,2	888,7	12334,5	849,1	1141,2			
30	10398,5	787,6	1061,9	13512,0	1011,3	1363,6			
35	11231,6	914,0	1235,7	14595,0	1174,0	1587,0			
40	12007,1	1040,1	1410,0						
45	12735,4	1167,2	1584,9						
50	13424,3	1295,0	1760,4						
60	14705,6	1553,2	21133						
70	15883,9	1813,8	2468,5						

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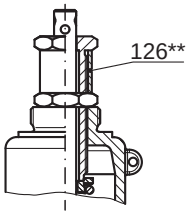
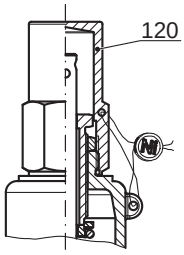
for steam, gases and liquids in closed completion

Typ 10

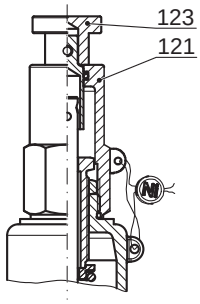
Typ 10.1 : Wst. / Material 1.4104 / 0.7043
Typ 10.2 : Wst. / Material 1.4571 / 1.4581
Typ 10.7 : Wst. / Material 1.4571 / 1.4308
Typ 10.7 nur mit Kopf C / only with head C



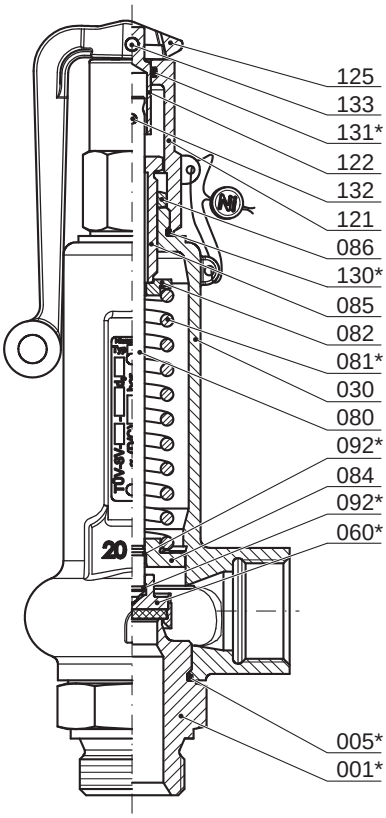
lock sleeve
on request



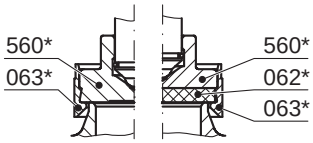
head C
gastight cap



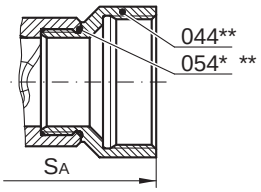
head B
gastight with lifting button



head A
gastight with lifting lever



disc complete, pos. 060*
metal seated soft seated



enlarged outlet
size I : S_A = 65 mm
size II: S_A = 80 mm

Item	Description	Material 10.1	10.2	10.7	Item	Description	Material 10.1	10.2	10.7
001*	1 inlet body	1.4104	1.4571	1.4571	120	1 cap (only head C)	1.0718	1.4581	1.4571
005*	1 o-ring	NBR	FPM	EPDM	121	1 lifting cap (only head A+B)	1.4104	1.4581	
030	1 spring bonnet	0.7043	1.4581	1.4308	122	1 coupling	1.4305	1.4305	
044	1 enlarged outlet	1.4104	1.4571	1.4571	123	1 lifting button (only head B)	1.4305	1.4305	
054*	1 o-ring	NBR	FPM	EPDM	125	1 lifting lever	3.2581	3.2581	
060*	1 disc, complete				126**	1 lock sleeve	1.4301	1.4301	
560*	1 disc	1.4571	1.4571	1.4571	130*	1 o-ring	NBR	FPM	EPDM
062*[1)]	1 soft sealing	see techn. appendix: KWD-1			131*	1 o-ring	NBR	FPM	
063*	1 disc ring	1.4571	1.4571	1.4571	132	1 groove pin	A4	A4	
080	1 spindel	1.4104	1.4571	1.4571	133	1 groove pin	A4	A4	
081*	1 spring	1.4310	1.4310	1.4310					
082	1 springplate, upper	1.0718	1.4305	1.4571					
084	1 springplate, lower	1.4104[2)]	1.4571	1.4571					
085	1 adjusting screw	1.4305	1.4305	1.4571					
086	1 lock nut	1.0718	1.4305	1.4571					
092*	2 lock ring	1.4571	1.4571	1.4571					

* expendable parts
** optional design, on request

[1)] only in disc with soft sealing
[2)] type 10.1 size II: 1.4571

02'07

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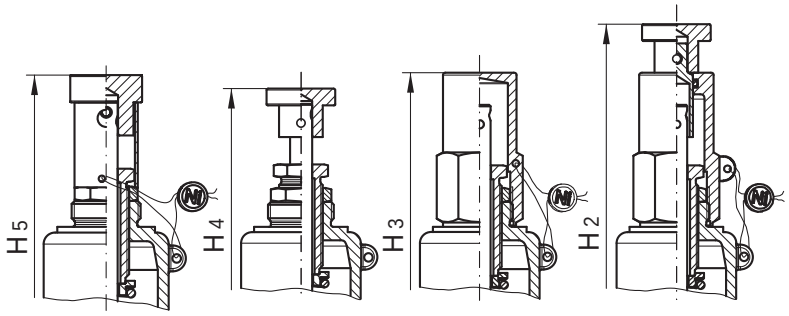
for steam, gases and liquids in closed completion

Typ 18

Typ 18.1 : Wst. / Material 1.4104 / 0.7043
Typ 18.2 : Wst. / Material 1.4571 / 1.4581
Typ 18.7 : Wst. / Material 1.4571 / 1.4308
Typ 18.7 nur mit Kopf C / only with head C

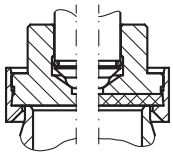


Kopf E / head E
gestützter Lüfteknopf
nicht gasdicht
supported lift. button
not gastight

Kopf D / head D
Lüfteknopf
nicht gasdicht
lifting button
not gastight

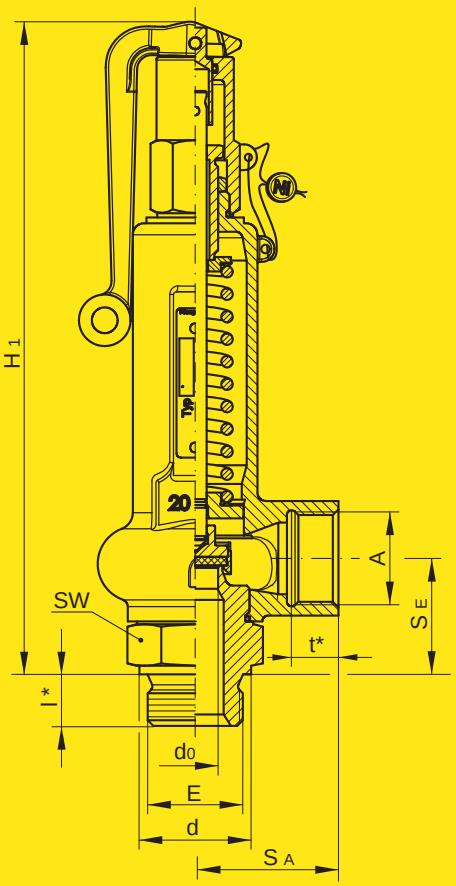
Kopf C / head C
gasdichte Kappe
gastight cap

Kopf B / head B
gasdicht mit
Lüfteknopf
gastight with lifting
button



metall. dicht
metal seated

weich dicht
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 18.1: -10°C bis / to 280°C / (350°C[1])
Typ 18.2: -60°C bis / to 280°C / (400°C[1])
Typ 18.7: -200°C bis / to 280°C / (300°C[1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet				Austritt Outlet			Baumaße Dimensions							Ansprechdruck Set pressure		Gewicht Weight
	E	SE	d	l*	A	SA	t*	H1	H2	H3	H4	H5	SW	d0	pmin	pmax	
	G/NPT	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	3/8	34	22	12	1/2 3/4	40	14 17	200	205	185	175	180	32	10	0,1	140	1,0
														8	20	200	
	1/2		26	14										12,5	0,1	70	
														10	0,1	140	
														8	20	200	
	3/4		32	16	1/2 3/4		14 17							16	0,05	40	
														12,5	0,1	70	
														10	0,1	140	
														8	20	200	
II	1/2	40	26	14	1	50	18	230	235	215	205	210	41	12,5	0,1	70	1,6
	3/4		32	16										16 [2]	0,1	32	
														12,5	32	70	
	1		39	18										20	0,1	20	
														16	0,1	32	
														12,5	32	70	
	1¼		49	20									50	20	0,1	20	
														16	0,1	32	

* Maß l und t bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l and t for NPT-design according to ANSI B 2.1

[1] höhere Temperaturen auf Anfrage / higher temperatures on request

[2] nur für Dämpfe und Gase / only for steam and gases

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Typ 18

Massen - bzw. Volumenstromtabelle / Discharge capacities

Baugröße I / Size I											
d_o [mm]	8			10			12,5			16	
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	α_d 0,32	$\alpha_{d\,max}$ 0,46		α_d 0,30	$\alpha_{d\,max}$ 0,38		α_d 0,21	$\alpha_{d\,max}$ 0,30		$\alpha_{d\,max}$ 0,14	
0,05										10	12
0,1				530	12	14	583	13	17	11	14
0,2				650	14	19	715	15	21	13	18
0,4				839	18	25	923	21	29	18	24
0,5				920	19	29	1011	22	33	19	26
1,0				1244	34	41	1368	40	48	32	39
1,5				1525	40	53	1675	47	64	37	51
2				1760	52	66	1935	63	79	49	62
3				2155	69	89	2369	84	107	66	85
4				2489	87	111	2737	105	134	82	107
6				3048	121	157	3352	145	189	114	150
8				3520	155	202	3870	186	244	147	193
10				3935	188	249	4326	228	299	179	237
15				4819	273	362	5299	329	437	260	344
20	3958	274	366	5565	356	477	6119	429	575	339	453
25	4424	338	454	6222	440	592	6841	531	714	419	563
30	4847	403	543	6816	525	707	7494	633	853	498	672
35	5235	468	633	7362	608	823	8100	734	992	579	782
40	5597	532	722	7871	693	939	8654	835	1132	659	893
45	5936	597	811	8348	778	1056	9178	937	1273		
50	6257	662	901	8799	862	1173	9675	1040	1414		
60	6854	794	1081	9639	1034	1407	10599	1246	1696		
70	7403	927	1263	10412	1208	1643	11448	1456	1981		
80	7915	1065	1445	11130	1386	1882					
90	8395	1206	1630	11805	1570	2122					
100	8848	1348	1815	12443	1753	2364					
110	9281	1489	2002	13052	1939	2607					
120	9693	1635	2190	13631	2129	2852					
130	10089	1781	2379	14188	2319	3099					
140	10470	1929	2571	14724	2512	3347					
150	10837	2087	2761								
175	11706		3249								
200	12514		3747								

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Typ 18

Massen - bzw. Volumenstromtabelle / Discharge capacities

Baugröße II / Size II									
d_o [mm]	12,5			16			20		
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	α_d 0,32	$\alpha_{d\,max}$ 0,41		α_d 0,25	$\alpha_{d\,max}$ 0,32		α_d 0,09	$\alpha_{d\,max}$ 0,12	
0,1	891	20	24	1157	25	32	629	14	18
0,2	1091	24	32	1417	31	41	770	17	22
0,4	1408	31	44	1829	40	55	994	21	30
0,5	1542	33	48	2004	42	62	1089	23	33
1,0	2089	58	70	2714	74	89	1475	43	53
1,5	2558	66	90	3323	85	116	1806	50	68
2	2954	86	109	3838	110	140	2086	65	83
3	3618	114	147	4700	147	188	2554	87	112
4	4177	143	185	2427	184	237	2950	109	141
6	5115	199	260	6647	255	333	3612	152	198
8	5907	255	334	7676	328	430	4171	195	255
10	6604	311	410	8581	399	527	4664	237	312
15	8088	450	606	10509	579	769	5712	343	455
20	9339	587	788	12136	755	1012	6596	448	600
25	10441	727	978	13568	934	1255			
30	11439	867	1168	14863	1112	1500			
35	12355	1005	1360	16055	1291	1746			
40	13208	1144	1551						
45	14009	1284	1744						
50	14766	1425	1936						
60	16177	1708	2324						
70	17472	1995	2716						

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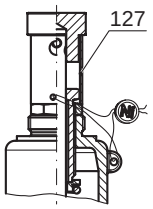
Entlastungsventil, federbelastet
Relief-Valve, springloaded

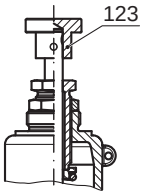
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 18

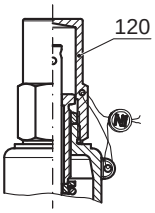
Typ 18.1 : Wst. / Material 1.4104 / 0.7043
Typ 18.2 : Wst. / Material 1.4571 / 1.4581
Typ 18.7 : Wst. / Material 1.4571 / 1.4308
Typ 18.7 nur mit Kopf C / only with head C



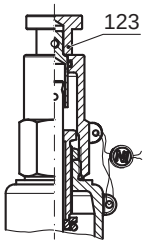
head E
supported lifting button
not gastight



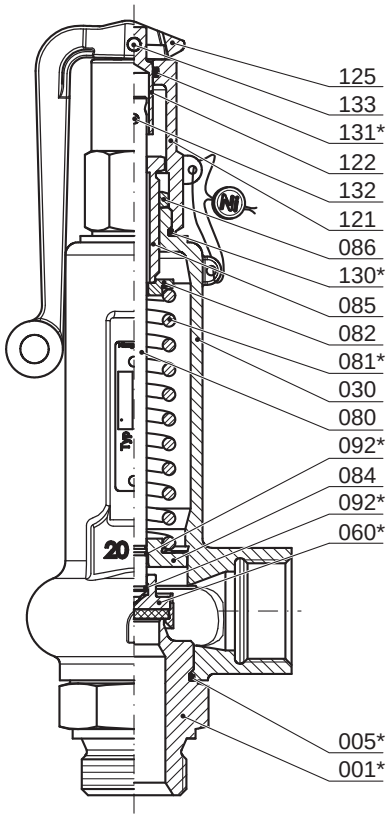
head D
lifting button
not gastight



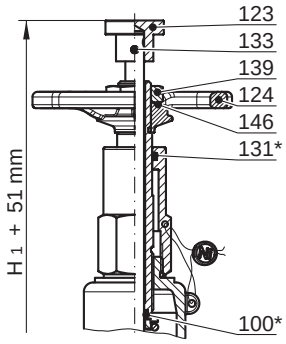
head C
gastight cap



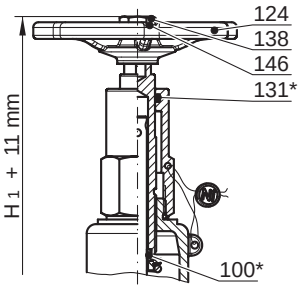
head B
gastight with
lifting button



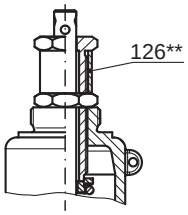
head A
gastight with lifting lever



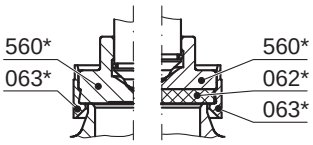
head G [3]
gastight with handwheel
and lifting button, on request



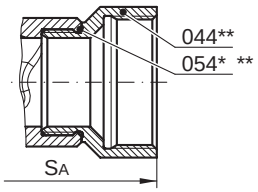
head F [3]
gastight with handwheel
on request



lock sleeve
on request



disc complete, pos. 060*
metal seated soft seated



enlarged outlet
size I : SA = 65 mm
size II: SA = 80 mm

Item	Description	Material 18.1	18.2	18.7	Item	Description	Material 18.1	18.2	18.7
001*	1 inlet body	1.4104	1.4571	1.4571	122	1 coupling	1.4305	1.4305	
005*	1 o-ring	NBR	FPM	EPDM	123	1 lifting button (only head B)	1.4305	1.4305	
030	1 spring bonnet	0.7043	1.4581	1.4308	125	1 lifting lever	3.2581	3.2581	
044**	1 enlarged outlet	1.4104	1.4571	1.4571	127	1 support tube	1.4301	1.4301	
054* **	1 o-ring	NBR	FPM	EPDM	130*	1 o-ring	NBR	FPM	EPDM
060*	1 disc, complete				131*	1 o-ring	NBR	FPM	
560*	1 disc	1.4571	1.4571	1.4571	132	1 groove pin	A4	A4	
062* [1]	1 soft sealing	see techn. appendix: KWD-1			133	1 groove pin	A4	A4	
063*	1 disc ring	1.4571	1.4571	1.4571					
080	1 spindel	1.4104	1.4571	1.4571		head F and G			
081*	1 spring	1.4310	1.4310	1.4310	100*	1 o-ring (only head G)	NBR	FPM	EPDM
082	1 springplate, upper	1.0718	1.4305	1.4571	123	1 lifting button (only head G)	1.4305	1.4305	
084	1 springplate, lower	1.4104 [2]	1.4571	1.4571	124	1 hand wheel	3.2581	3.2581	
085	1 adjusting screw	1.4305	1.4305	1.4571	138	1 screw (only head F)	A2	A2	
086	1 lock nut	1.0718	1.4305	1.4571	139	1 nut (only head G)	A2	A2	
092*	2 lock ring	1.4571	1.4571	1.4571	146	1 washer	A2	A2	
120	1 cap (only head C)	1.0718	1.4581	1.4571					
121	1 lifting cap (only head A+B)	1.4104	1.4581			on request			
					126**	1 lock sleeve	1.4301	1.4301	EPDM

* expendable parts
** Option, auf Anfrage

[1] only in disc with soft sealing
[2] type 18.1 size II: 1.4571

[3] with handwheel adjustable as a pressure controlvalve

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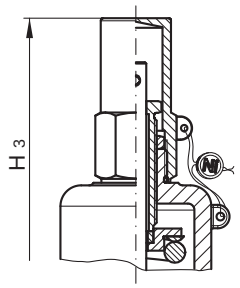
Full-Lift-Safety-Valve, springloaded

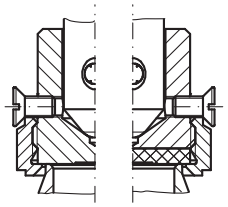
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 19

Typ 19.1 : Wst. / Material 1.4104 / 0.7043
Typ 19.2 : Wst. / Material 1.4571 / 1.4581
Typ 19.7 : Wst. / Material 1.4571 / 1.4308
Typ 19.7 nur mit Kopf C / only with head C

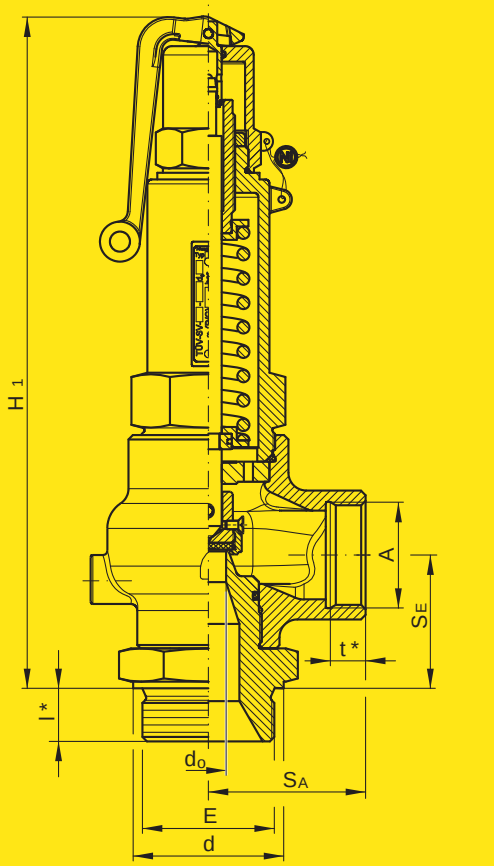


Kopf C, gasdichte Kappe
head C, gastight cap



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

BG II: TÜV • SV • XX-940 • do • D/G/F • α d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 19.1: -10°C bis / to 280°C / (350°C[1)])
Typ 19.2: -60°C bis / to 280°C / (400°C[1)])
Typ 19.7: -200°C bis / to 280°C / (300°C[1)])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet				Austritt Outlet			Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
	E	S E	d	l *	A	S A	t *	H1	H3	SW	do	p min	p max	
	G/NPT	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
II	3/4	60	32	16	1½	70	18	305	290	50	12,5	7 (D/G)	20	3,6
												20 (D/G/F)	130	
											16	0,1	70	
	1	60	39	18							12,5	7 (D/G)	20	
												20 (D/G/F)	130	
											16	0,1	70	
											20	0,1	40	
	1¼	60	49	20							16	0,1	70	
											20	0,1	40	
											25	0,05	30	
	1½	60	55	22							25	0,05	30	

* Maß l und t bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l and t for NPT-design according to ANSI B 2.1

1) höhere Temperaturen auf Anfrage / higher temperatures on request () Sonderausführung / special design

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Typ 19

Massen - bzw. Volumenstromtabelle / Discharge capacities

d_o [mm]	12,5			16			20			25		
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	α_d 0,56	$\alpha_{d\,max}$ 0,77		α_d 0,45	$\alpha_{d\,max}$ 0,60		α_d 0,45	$\alpha_{d\,max}$ 0,58		α_d 0,37	$\alpha_{d\,max}$ 0,52	
0,05										3577,8	80,4	99,0
0,1				2058,1	45,1	56,9	3215,7	70,5	88,9	4131,3	91,1	114,8
0,2				2520,6	53,4	70,2	3938,5	83,8	110,1	5059,8	113,7	149,5
0,3				2910,6	59,7	81,7	4547,7	95,7	130,9	5842,6	130,9	179,0
0,4				3254,1	64,8	92,0	5084,5	103,0	146,2	6532,2	144,7	205,2
0,5				3564,7	69,1	101,5	5569,8	113,8	167,0	7155,7	156,9	230,4
1,0				4826,6	129,2	156,3	7541,6	199,7	241,4	9688,8	277,0	334,9
1,5				5911,4	153,2	207,9	9236,5	233,4	316,9	11866,4	321,4	436,3
2,0				6825,9	203,2	257,5	10665,4	309,3	392,0	13702,1	432,5	548,0
2,5				7631,5	242,0	306,8	11924,3	367,4	465,6	15319,4	513,9	651,4
3,0				8359,9	276,8	354,6	13062,4	418,0	535,6	16781,6	585,6	750,3
3,5				9029,8	312,1	399,9	14109,0	471,3	604,0	18126,2	660,3	846,1
4,0				9653,2	345,5	445,2	15083,2	521,9	672,4	19377,7	731,1	942,0
4,5				10238,8	380,6	490,5	15998,1	574,9	740,9	20553,1	805,3	1037,8
5				10792,6	413,5	535,8	16863,5	624,6	809,3	21664,9	875,0	1133,8
6				11822,7	480,8	626,5	18473,0	726,3	946,3	23732,7	1017,4	1325,7
7		429,9	561,8	12770,0	548,9	717,3	19953,2	829,0	1083,4	25634,3	1161,4	1517,7
8		483,0	633,0	13651,7	616,6	808,1	21330,8	931,3	1220,6	27404,2	1304,6	1709,9
9		535,7	704,2	14479,8	683,9	899,0	22624,7	1033,0	1357,8	29066,5	1447,1	1902,2
10		588,8	775,4	15263,1	751,7	989,9	23848,6	1135,3	1495,2	30638,8	1590,4	2094,6
15		851,7	1464,0	18693,3	1087,3	1445,5	29208,4	1642,3	2183,3	37524,7	2300,7	3058,5
20	16395,1	1112,0	1490,3	21585,3	1419,7	1902,6	33727,0	2144,3	2873,7	43329,8	3003,9	4025,7
25	18330,2	1376,0	1849,5	24133,1	1756,8	2361,2	37707,9	2653,4	3566,4	48444,2	3717,1	4996,0
30	20079,8	1639,0	2209,9	26436,4	2092,4	2821,3	41306,9	3160,4	4261,4	53068,0	4427,3	5969,6
35	21688,6	1902,0	2571,5	28554,6	2428,3	3283,0	44616,6	3667,7	4958,6			
40	23186,1	2164,6	2934,3	30526,2	2763,5	3746,2	47697,2	4174,0	5658,3			
45	24592,6	2429,1	3298,3	32377,9	3101,1	4210,9						
50	25922,9	2694,9	3663,6	34129,3	3440,6	4677,2						
60	28397,1	3232,4	4397,9	37386,8	4126,7	5614,6						
70	30672,3	3774,6	5137,1	40382,3	4818,9	6558,4						
80	32790,1	4331,6	5881,5									
90	34779,2	4904,3	6631,0									
100	36660,5	5480,7	7385,9									
110	38449,8	6061,7	8146,0									
120	40159,5	6650,2	8911,6									
130	41799,4	7246,1	9682,7									

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Full-Lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
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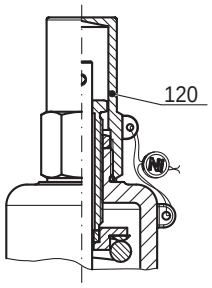
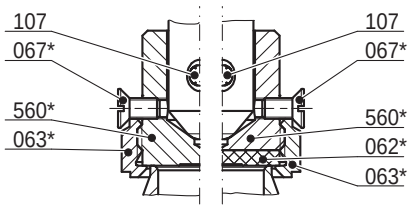
Typ 19

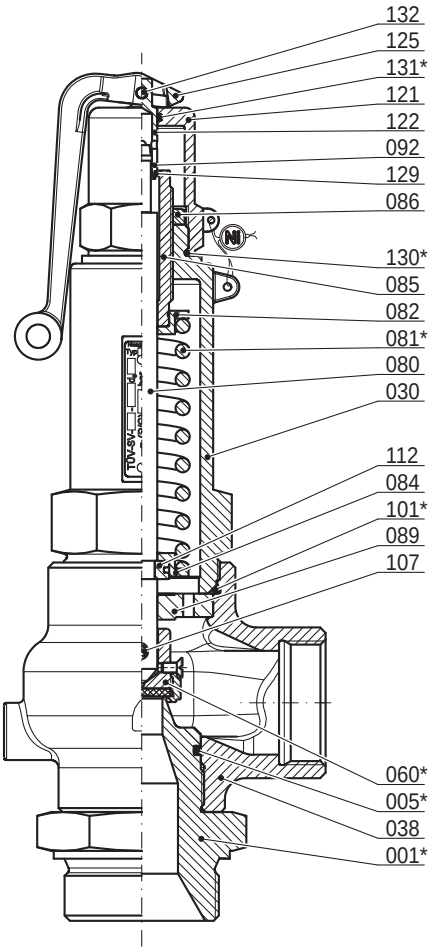
Typ 19.1 : Wst. / Material 1.4104 / 0.7043
Typ 19.2 : Wst. / Material 1.4571 / 1.4581
Typ 19.7 : Wst. / Material 1.4571 / 1.4308
Typ 19.7 nur mit Kopf C / only with head C



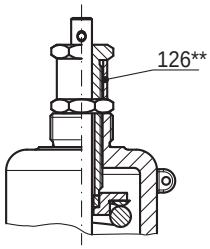
head C, gastight cap



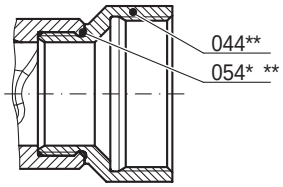
disc complete, pos. 060*
metal seated soft seated



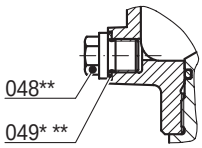
head A
gastight with lifting lever



lock sleeve
on request



enlarged outlet
on request



drainage screw

Item	Description	Material 19.1	19.2	19.7
001*	1 inlet body	1.4104	1.4571	1.4571
005*	1 o-ring	NBR	FPM	EPDM
030	1 spring bonnet	0.7043	1.4581	1.4308
038	1 outlet body	0.7043	1.4581	1.4308
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendix: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067*	1 security screw	A2	A2	A2
107	1 spring pin	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.4571	1.4571	1.4571
092	1 lock ring (only head A)	1.4571	1.4571	1.4571
101*	1 o-ring	NBR	FPM	EPDM

Item	Description	Material 19.1	19.2	19.7
112	1 splitted ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4571	1.4571
121	1 lifting cap (only head A)	1.4104	1.4571	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
129	1 presure plate	1.4571	1.4571	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
	on request			
044**	1 enlarged outlet	1.4104	1.4571	1.4571
054* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

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* expendable parts

** optional design, on request

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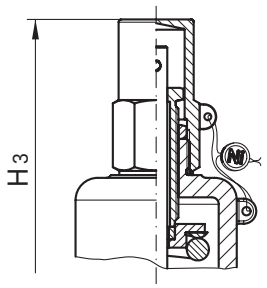
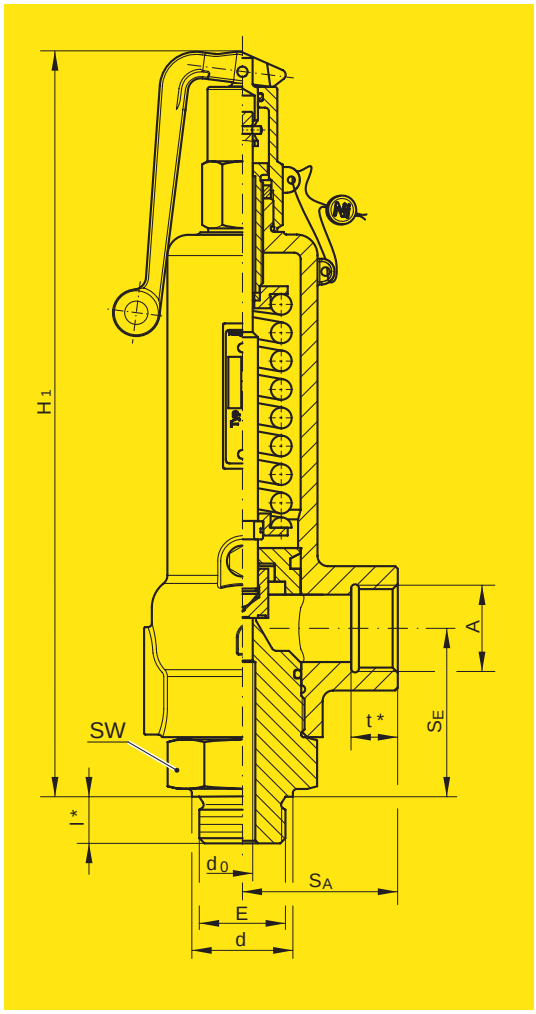
Typ 21

Typ 21.2 : Wst. / Material 1.4571, 1.4581



Kopf C, gasdichte Kappe
head C, gastight cap



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-1036 • 12,5 • F • 0,14 • 250

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 21.2: -60°C bis / to 350°C (400°C [1])

Einbaulage: senkrecht
Installation position: vertical

Eintritt Inlet				Austritt Outlet			Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
E	S_E	d	l *	A	S_A	t *	H_1	H_3	SW	d_0	p_{min}	p_{max}	
G/NPT	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
3/4	65	32	16	1	60	18	287	274	50	8	250	600	4,2
3/4	65	32	16							6	600	1100	
1	65	39	18							12,5	100	250	
1	65	39	18							8	250	600	
1 [2]	65	39	18							12,5		250	

* Maß l und t bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l and t for NPT-design according to ANSI B 2.1
1) höhere Temperaturen auf Anfrage / higher temperatures on request
2) TÜV-Bauteil geprüfte Ausführung / TÜV-approval Safety valve

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 21

Massen - bzw. Volumenstromtabelle / Discharge capacities

d_o [mm]	6			8			12,5		
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
p_e [bar(g)]									
100				2500	440	500	6200	1000	1200
120				2800	540	600	6800	1300	1400
140				3000	650	700	7400	1600	1700
160				3200	770	800	7900	1900	1900
180				3400	910	890	8300	2200	2200
200				3600	1100	990	8800	2600	2400
230				3900		1100	9400		2800
260				4100		1300			
290				4300		1400			
320				4500		1600			
360				4800		1800			
400				5100		2000			
440				5300		2200			
480				5600		2400			
520				5800		2600			
560				6000		2800			
600	3500		1700	6200		3000			
650	3600		1800						
700	3800		1900						
750	3900		2100						
800	4000		2200						
850	4200		2300						
900	4300		2500						
950	4400		2600						
1000	4500		2800						
1050	4600		2900						
1100	4700		3000						

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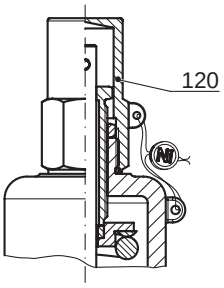
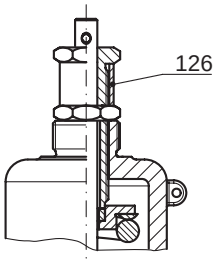
for steam, gases and liquids in closed completion

Typ 21

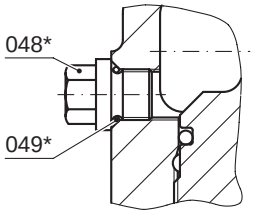
Typ 21.2 : Wst. / Material 1.4571, 1.4581



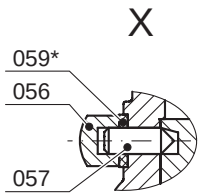
head C
gastight cap



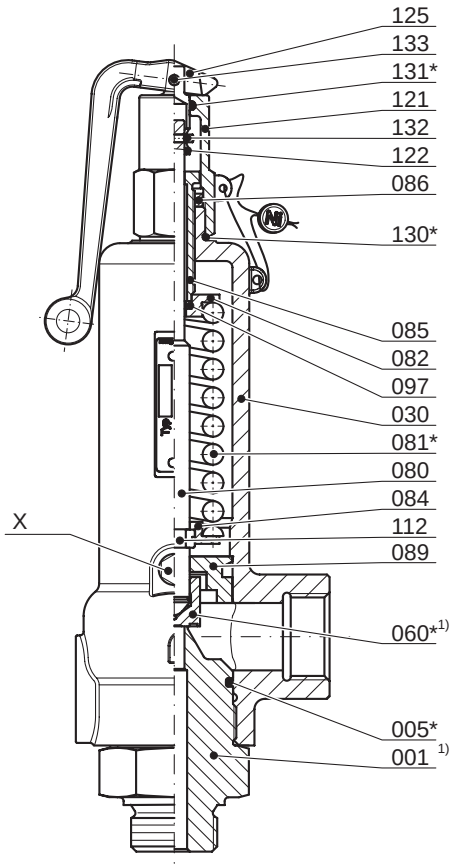
lock sleeve
on request



drainage screw
on request



90° ↻



head A
gastight with lifting lever

Item	Description	Material	Item	Description	Material
001 1)	1 inlet body	1.4571	086	1 lock nut	1.4305
005*	1 o-ring	FPM	089	1 guide ring	1.4571
030	1 spring bonnet	1.4581	097	1 glide ring	1.4305
048*	1 drainage screw	A 4	112	1 split ring	1.4305
049*	1 packing ring	PTFE	120	1 cape (only head C)	1.4571
056	2 lock nut	A 2	121	1 lifting cape (only head A)	1.4571
057	2 screwed pin	A 2	122	1 coupling	1.4305
059*	2 packing ring	PTFE	125	1 lifting lever	3.2581
060*1)	1 disc, complete	1.4571	126	1 lock sleeve	1.4305
080	1 spindle	1.4305	130*	1 o-ring	FPM
081*	1 spring	1.4310	131*	1 o-ring	FPM
082	1 springplate, upper	1.4305	132	1 groove pin	A 4
084	1 springplate, lower	1.4305	133	1 groove pin	A 4
085	1 adjusting screw	1.4571			

* expendable parts

1) seat and disc plated with stellit for $d_o = 6$ or $d_o = 8$

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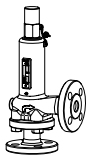
Flansch-Sicherheits- / Entlastungsventile, in Eckform

Flange Safety- / Relief-Valves, right angle



Inhaltsverzeichnis
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Ventil Valve	Verwendung Use	Medium	*	DN_E	PN_E bar	Köpfe Heads
Typ 3	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded mit geschlossener Federhaube, mit Sonderausführung in closed completion, with spezial equipment z.B. Faltenbalg / example bellow unit	D/G/F	-	15 - 100	16 - 250	A - T
Typ 30	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	B	15 - 100	16 - 63	A, C, H, T
Typ 31	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	B	15 - 80	16 - 63	A, C, H, T
Typ 32	Vollhub-Sicherheitsventil, federbelastet Full-lift-Safety-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G/F	B	15 - 65	16 - 160	A, C, H, T
Typ 33	Entlastungsventil, federbelastet Relief-Valve, springloaded mit geschlossener Federhaube in closed completion	D/G	-	15 - 50	16 - 63	A, C, H, T

Medium
- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

* Bauteilgeprüft / TÜV-Approval..... - B -
** Flanschabmessungen sind variabel / flangedimension are variable

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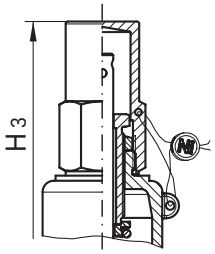
Entlastungsventil, federbelastet
Relief-Valve, springloaded

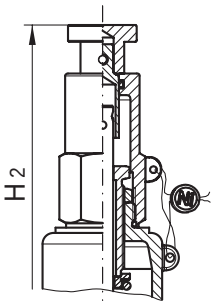
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

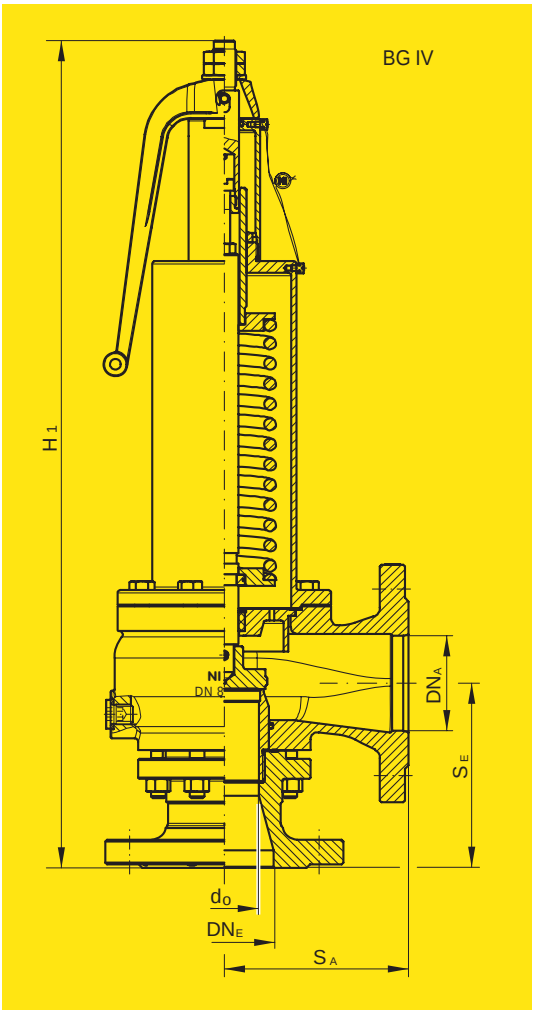
Typ 3.1 BG I :	Wst. / Material	1.0460 / 0.7043
Typ 3.1 BG II+III :	Wst. / Material	1.0460, 1.0619 / 1.0619
Typ 3.1 BG IV :	Wst. / Material	1.0619 / 1.0619
Typ 3.2 :	Wst. / Material	1.4571 / 1.4581 / 1.4581
Typ 3.7 :	Wst. / Material	1.4571 / 1.4308



Kopf C / head C
gasdichte Kappe
gastight cap



Kopf B / head B
gasdicht mit
Lüfteknopf
gastight with lifting
button



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 3.1 BG I :	-10°C bis / to 280°C (350°C[1)])
Typ 3.1 BG II - IV :	-60°C bis / to 350°C
Typ 3.2 BG I :	-60°C bis / to 280°C (400°C[1)])
Typ 3.2 BG II - IV :	-60°C bis / to 350°C (400°C[1)])
Typ 3.7 BG I - IV :	-200°C bis / to 280°C (300°C[1)])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage:	senkrecht
Installation position:	vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
	DN E / NPS		PN E / [bar]	do	SE min	DN A / NPS		PN A / [bar]	SA	H1	H2	H3		p min	p max	
	[mm]		class	[mm]	[mm]	[mm]		class	[mm]	[mm]	[mm]	[mm]		[bar(g)]	[bar(g)]	[kg]
I	15 20 25	1/2 3/4 1	16-250 150-2500	8,12.5 12.5 8,12.5,16,18	90[2)] 95 100	15 20 25	1/2 3/4 1	16/40 150	90 95 100	282 287 292	283 288 293	268 273 278		0,1 0,1 0,1	250 40 250	4,3 4,5 4,6
II	32 40	1¼ 1½	16-160 150-1500	16, 20, 25 20, 25, 32	105 115	32 40	1¼ 1½	16/40 150	105 115	395 405	* *	375 385		0,1 0,1	100 100	9,6 10,0
III	50 65	2 2½	16-160 150-1500	25, 32, 40 32, 40, 50	125 145	50 65	2 2½	16/40 150	125 145	450 470	* *	430 450		0,1 0,1	100 100	15,0 19,3
IV	80 100	3 4	16-160 150-1500	32, 40, 50, 58 50, 60, 70	155 175	80 100	3 4	16/40 150	155 175	700 730	* *	620 650		0,25 0,25	63 40	36,8 40,5

* auf Anfrage / on request

[1)] Höhere Temperaturen auf Anfrage / higher temperatures on request

[2)] > PN 40 <= PN 160 / 105 mm, PN 250 / 115 mm

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [10³ kg/h] / water at 68°F [10³ kg/h]

Baugröße / Size	I			II				III				IV					
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	80	100	100	100
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	40	50	58	50	60	70
α_d, max	0,16	0,15	0,10	0,16	0,14	0,15	0,12	0,13	0,11	0,11	0,10	0,16	0,16	0,13	0,18	0,16	0,14
p_e / [bar(g)]																	
0,1	0,3	0,5	0,4	0,8	1,1	1,2	1,5	1,7									
0,2	0,4	0,7	0,6	1,1	1,5	1,7	2,2	2,4	3,1	3,1	4,4	4,6	7,1	7,8	8,0	10,0	12,0
0,3	0,5	0,8	0,7	1,4	1,9	2,0	2,7	2,9	3,8	3,8	5,5	5,6	8,7	9,6	9,8	12,5	15,0
0,4	0,6	1,0	0,8	1,6	2,2	2,4	3,1	3,3	4,4	4,4	6,3	6,5	10,0	11,0	11,0	14,5	17,0
0,5	0,7	1,1	0,9	1,8	2,5	2,6	3,5	3,7	5,0	5,0	7,0	7,2	11,0	12,3	12,5	16,0	19,5
1,0	1,0	1,5	1,3	2,5	3,5	3,7	4,9	5,3	7,0	7,0	10,0	10,0	16,0	17,4	18,0	23,0	27,5
1,5	1,2	1,9	1,6	3,1	4,3	4,6	6,0	6,5	8,6	8,6	12,0	12,5	19,5	21,4	22,0	28,0	33,5
2,0	1,4	2,2	1,8	3,6	4,9	5,3	6,9	7,5	9,9	9,9	14,0	14,5	22,5	24,7	25,5	32,5	38,5
2,5	1,6	2,4	2,0	4,0	5,5	5,9	7,7	8,4	11,0	11,0	16,0	16,0	25,0	27,6	28,5	36,5	43,5
3,0	1,7	2,6	2,2	4,4	6,0	6,5	8,5	9,2	12,0	12,0	17,5	17,5	27,5	30,2	31,0	40,0	47,5
3,5	1,9	2,9	2,4	4,8	6,5	7,0	9,2	9,9	13,0	13,0	18,5	19,0	30,0	32,7	33,5	43,0	51,0
4,0	2,0	3,1	2,6	5,1	7,0	7,5	9,8	10,5	14,0	14,0	20,0	20,5	32,0	34,9	36,0	46,0	55,0
4,5	2,1	3,2	2,7	5,4	7,4	7,9	10,5	11,5	15,0	15,0	21,0	21,5	34,0	37,0	38,0	49,0	58,0
5	2,2	3,4	2,9	5,7	7,8	8,4	11,0	12,0	15,5	15,5	22,5	23,0	35,5	39,0	40,0	51,5	61,0
6	2,4	3,7	3,2	6,2	8,5	9,2	12,0	13,0	17,0	17,0	24,5	25,0	39,0	42,8	44,0	56,0	67,0
7	2,6	4,0	3,4	6,7		9,9		14,0		18,5		27,0	42,0		47,5	61,0	
8	2,8	4,3	3,6	7,2		10,5		15,0		20,0		29,0	45,0		51,0	65,0	
9	3,0	4,6	3,9	7,7		11,0		16,0		21,0		30,5	48,0		54,0	69,0	
10	3,1	4,8	4,1	8,1		12,0		17,0		22,0		32,0	50,5		57,0	72,5	
12	3,4	5,3	4,5	8,8		13,0		18,5		24,5		35,5	55,0		62,0	79,5	
14	3,7	5,7	4,8	9,5		14,0		20,0		26,5		38,0	60,0		67,0	86,0	
16	4,0	6,1	5,2	10,0		15,0		21,5		28,0		41,0	64,0		72,0	92,0	
18	4,2	6,5	5,5	10,5		16,0		22,5		30,0		43,5	68,0		76,0	97,5	
20	4,4	6,8	5,8	11,5		17,0		24,0		31,5		45,5	71,5		80,5	103	
25	5,0	7,7		13,0		19,0		26,5		35,0		51,0	80,0		90,0	115	
30	5,5	8,4		14,0		20,5		29,0		38,5		56,0			98,5		
35	5,9	9,7		15,0		22,0		31,5		41,5		60,5			106		
40	6,3			16,0		24,0		33,5		44,5		64,5			113		
45	6,7																
50	7,0																

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [10^3 kg/h] / water at 68°F [10^3 kg/h]

Baugröße / Size	I			II			III			IV		
DN Eintr. / Inlet	15 u. 25		25		32	40		50	65		80	
d_O / mm	8		12,5		16	20		25	32		32	
α_d, max	0,07		0,16		0,19	0,15		0,15	0,13		0,22	
p_e / [bar(g)]												
50	1,26		7,0		13,5	18,0		26,5	37,5		63,5	
60	1,38		7,7		15,0	20,0		29,0	41,0		70,0	
70	1,50		8,3		16,0	21,5		31,0	44,5		75,0	
80	1,60		8,9		17,5	23,0		33,5	47,5			
90	1,70		9,5		18,5	24,0		35,5	50,5			
100	1,79		10,0		19,5	25,5		37,5	53,0			
110	1,87		10,5									
120	1,96		11,0									
130	2,04											
140	2,12											
150	2,19											
160	2,26											
170	2,33											
180	2,40											
190	2,46											
200	2,53											
210	2,59											
220	2,65											
230	2,71											
240	2,77											
250	2,83											

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1'06

Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] bzw. t/h / saturated steam [kg/h] bzw. t/h

Baugröße / Size	I			II				III				IV					
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	80	100	100	100
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	40	50	58	50	60	70
α_d, max	0,23	0,19	0,14	0,23	0,19	0,20	0,17	0,18	0,15	0,16	0,14	0,22	0,22	0,18	0,25	0,22	0,19
p_e / [bar(g)]	kg/h											t/h					
0,4	16	23	20	41	54	58	77	83	110	112	158	0,16	0,25	0,27	0,28	0,36	0,43
0,5	18	26	23	46	61	65	87	93	124	126	178	0,18	0,28	0,31	0,32	0,40	0,48
0,6	20	29	25	51	67	71	96	103	136	139	196	0,19	0,30	0,34	0,35	0,44	0,52
0,7	22	31	27	56	72	77	104	111	148	151	213	0,21	0,33	0,36	0,38	0,47	0,57
0,8	23	33	30	60	78	83	112	120	159	162	229	0,23	0,35	0,39	0,41	0,51	0,61
0,9	25	35	32	65	83	88	120	128	170	174	245	0,24	0,38	0,42	0,44	0,54	0,65
1,0	27	38	34	69	89	94	128	136	181	186	262	0,26	0,40	0,45	0,47	0,58	0,69
1,5	36	49	45	91	116	123	169	179	238	247	346	0,34	0,53	0,59	0,62	0,76	0,91
2,0	44	60	55	113	144	152	210	223	295	308	429	0,42	0,66	0,73	0,77	0,95	1,1
2,5	52	71	66	134	171	180	250	265	349	368	508	0,50	0,79	0,87	0,91	1,1	1,3
3,0	60	81	75	153	197	207	289	306	398	425	581	0,58	0,91	1,0	1,0	1,3	1,5
3,5	67	90	84	171	221	232	324	343	446	476	651	0,65	1,0	1,1	1,1	1,5	1,7
4,0	74	100	93	189	245	257	359	380	494	527	721	0,72	1,1	1,2	1,3	1,6	1,9
4,5	81	110	102	208	268	282	393	416	542	578	791	0,79	1,2	1,4	1,4	1,8	2,1
5	88	119	111	226	292	307	428	453	590	629	661	0,86	1,3	1,5	1,5	1,9	2,3
6	102	139	129	263	339	357	497	526	685	731	999	1,0	1,6	1,7	1,8	2,2	2,6
7	117	158	147	299		406		599		832		1,1	1,8		2,0	2,6	
8	131	177	165	335		456		672		933		1,3	2,0		2,3	2,9	
9	145	196	183	371		505		744		1030		1,4	2,2		2,5	3,2	
10	159	215	201	408		554		817		1130		1,5	2,4		2,8	3,5	
12	187	254	237	480		652		962		1330		1,8	2,9		3,2	4,1	
14	215	292	272	552		750		1100		1530		2,1	3,3		3,7	4,7	
16	244	330	308	624		848		1250		1740		2,4	3,7		4,2	5,4	
18	272	368	343	696		956		1390		1930		2,6	4,1		4,7	6,0	
20	300	406	379	768		1040		1540		2140		2,9	4,6		5,2	6,6	
25	370	501		948		1290		1900		2640		6,6	5,7		6,4	8,1	
30	441	597		1130		1530		2260		3140		4,3			7,7		
35	512	693		1310		1780		2620		3640		5,0			8,9		
40	583	789		1490		2030		2990		4150		5,7			10		
45	655																
50	727																

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] bzw. t/h / saturated steam [kg/h] bzw. t/h

auf Anfrage / on request

Baugröße / Size	I			II			III			IV		
DN Eintr. / Inlet	15 u. 20		25		32	40		50	65		80	
d_O / mm	8		12,5		16	20		25	32		32	
α_d, max	0,10		0,23		0,27	0,23		0,21	0,18		0,30	
p_e / [bar(g)]	kg/h									t/h		
50	129		727		1400	1860		2650	3730		6210	
60	155		873		1680	2230		3190	4480		7460	
70	183	—	1030	—	1980	2640	—	3760	5280	—	8800	—
80	209	—	1170	—	2250	3000	—	4280	6010	—	—	—
90	236		1330		2550	3400		4850	6810			
100	264		1480		2860	3800		5430	7620			
110	293		1650									
120	323		1820									
130	354											
140	387											
150	422											
160	459											
170	499											
180	542											
190	590											
200	647											
210	718											
220	925											
230												
240												
250												

1'06

Robinex AG
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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I				II				III				IV					
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	80	100	100	100	100
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	40	50	58	50	60	70	
α_d, max	0,23	0,19	0,14	0,23	0,19	0,20	0,17	0,18	0,15	0,16	0,14	0,22	0,22	0,18	0,25	0,22	0,19	
p_e / [bar(g)]																		
0,1	9	14	12	23	31	33	44	48										
0,2	13	20	17	33	45	48	64	69	91	92	130	132	206	226	235	296	354	
0,3	16	24	21	42	56	60	80	86	114	115	163	164	256	282	294	369	440	
0,4	19	28	25	50	66	70	94	101	134	135	192	192	300	331	346	432	517	
0,5	22	32	28	57	75	79	107	114	152	154	218	218	340	376	395	490	586	
1,0	34	48	43	87	112	119	162	173	230	236	332	327	512	569	601	737	881	
1,5	45	62	57	117	148	156	215	229	304	315	441	433	676	752	798	974	1160	
2,0	57	77	71	146	184	195	269	286	378	395	550	542	846	940	992	1220	1450	
2,5	67	91	85	173	221	232	323	342	450	475	656	650	1010	1120	1170	1460	1730	
3,0	77	104	97	198	255	269	374	396	516	550	752	757	1180	1300	1340	1700	2000	
3,5	87	117	109	222	287	302	421	445	580	619	846	851	1330	1460	1510	1910	2250	
4,0	96	130	122	247	319	336	467	495	644	687	940	945	1480	1620	1680	2130	2500	
4,5	106	144	134	272	351	369	514	544	709	756	1030	1040	1620	1790	1840	2340	2750	
5	116	157	146	296	383	403	561	594	773	825	1130	1130	1770	1950	2010	2550	3000	
6	135	183	170	346	446	470	654	693	902	962	1310	1320	2070	2270	2350	2980	3500	
7	154	209	195	395		537		792		1100		1510	2360		2680	3400		
8	174	235	219	445		604		891		1240		1700	2660		3020	3830		
9	193	261	243	494		671		990		1370		1890	2950		3360	4250		
10	212	287	268	544		739		1090		1510		2080	3250		3690	4680		
12	251	340	317	643		873		1290		1790		2460	3850		4370	5530		
14	290	392	366	742		1010		1480		2060		2840	4430		5040	6390		
16	328	445	415	841		1140		1680		2340		3220	5030		5710	7240		
18	367	497	464	940		1280		1880		2620		3600	5620		6390	8100		
20	406	550	513	1040		1410		2080		2890		3980	6220		7060	8950		
25	503	681		1290		1750		2580		3580		4930	7700		8750	11100		
30	601	813		1540		2090		3080		4280		5880			10400			
35	698	945		1790		2430		3580		4970		6840			12100			
40	796	1080		2040		2770		4080		5670		7790			13800			
45	894																	
50	991																	

1'06

Robinex AG
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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I			II			III			IV		
DN Eintr. / Inlet	15 u. 25		25		32	40		50	65		80	
d_O / mm	8		12,5		16	20		25	32		32	
α_d, max	0,10		0,23		0,27	0,23		0,21	0,18		0,30	
p_e / [bar(g)]												
50	176		991		1910	2540		3620	5080		8470	
60	211		1190		2280	3040		4330	6090		10100	
70	246		1380		2660	3540		5050	7090		10800	
80	281		1580		3030	4040		5760	8090			
90	316		1770		3410	4540		6470	9090			
100	350		1970		3780	5040		7180	10100			
110	385		2160									
120	419		2350									
130	453											
140	487											
150	521											
160	554											
170	587											
180	620											
190	652											
200	684											
210	716											
220	748											
230	779											
240	810											
250	840											

1'06

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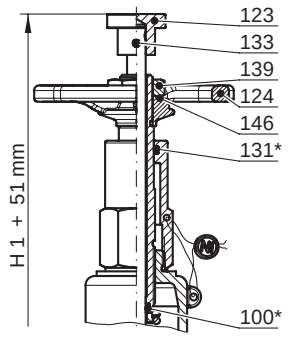
Relief-Valve, springloaded

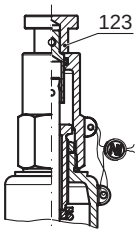
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

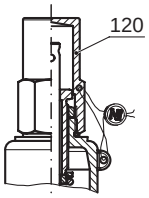
Typ 3.1 :	Wst. / Material	1.0460 / 0.7043	DN 15/15
Typ 3.2 :	Wst. / Material	1.4571 / 1.4581	DN 20/20
Typ 3.7 :	Wst. / Material	1.4571 / 1.4308	DN 25/25



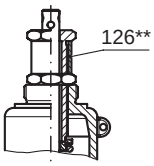
head G
gastight with handwheel
and lifting button



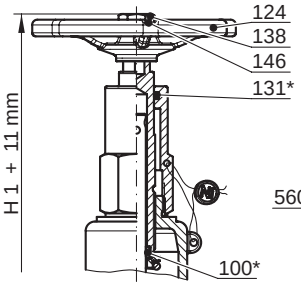
head B
gastight with
lifting button



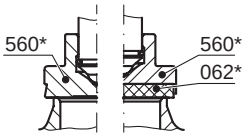
head C
gastight cap



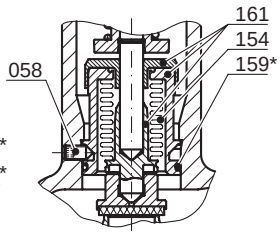
lock sleeve
on request



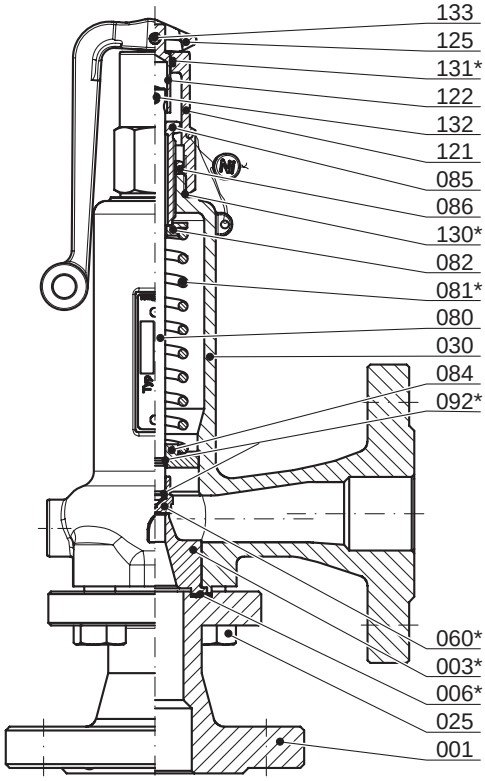
head F
gastight with handwheel



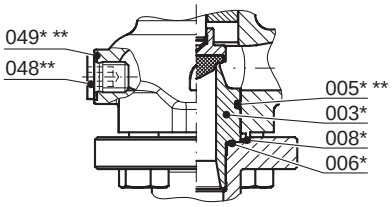
disc complete, pos. 060*
metal seated soft seated



with bellow
on request



head A
gastight with lifting lever



drainage screw
on request

screw seat from PN 40

Item	Description	Material 3.1	3.2	3.7	Item	Description	Material 3.1	3.2	3.7
001	1 inlet body	1.0460	1.4571	1.4571	092*	2 lock ring	1.4571	1.4571	1.4571
003*	1 seat	1.4104	1.4571	1.4571	100	1 o-ring	NBR	FPM	FPM
005* **	1 o-ring	NBR	FPM	EPDM	120	1 cap (only head C)	1.0718	1.4581	1.4571
006*	1 packing ring	TESNIT BAU		PTFE	121	1 lifting cap (only head A)	1.4104	1.4581	
008*	1 packing ring	TESNIT BAU		PTFE	122	1 coupling	1.4305	1.4305	
025	4 screw	A2	A2	A2	123	1 lifting button (only head B+G)	1.4305	1.4305	
030	1 spring bonnet	0.7043	1.4581	1.4308	124	1 handwheel (only head F+G)	3.2581	3.2581	
048**	1 drainage screw	A4	A4	A4	125	1 lifting lever	3.2581	3.2581 [2)]	
049* **	1 packing ring	Cu	PTFE	PTFE	126**	1 lock sleeve	1.4305	1.4305	
058	2 screwed pin	A2	A2	A2	130*	1 o-ring	NBR	FPM	EPDM
060*	1 disc, complete				131*	1 o-ring	NBR	FPM	
560*	1 disc	1.4571	1.4571	1.4571	132	1 groove pin	A4	A4	
062*	1 soft sealing	see techn. appendic: KWD-1			133	1 groove pin	A4	A4	
080	1 spindel	1.4104	1.4571	1.4571	138	1 screw	A2	A2	
081*	1 spring	1.4310	1.4310	1.4310	139	1 nut	A2	A2	
082	1 springplate, upper	1.0718	1.4305	1.4571	146	1 washer	A2	A2	
084	1 springplate, lower	1.4571	1.4571	1.4571	154	1 bellow	1.4571	1.4571	
085	1 adjusting screw	1.4305	1.4305	1.4571	159*	1 o-ring	NBR	FPM	
086	1 lock nut	1.0718	1.4305	1.4305	161	1 bellow unit	1.4571	1.4571	

* expendable parts

[2)] on request : 1.4581

ngl 02'07

Robinex AG
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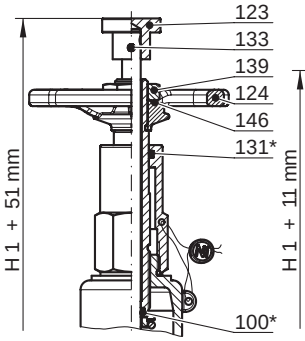
Entlastungsventil, federbelastet
Relief-Valve, springloaded

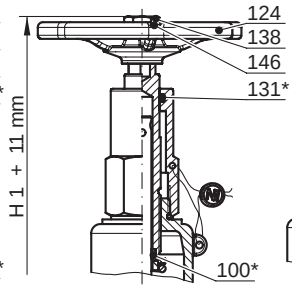
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

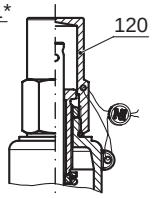
Typ 3.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 32/32
Typ 3.2 :	Wst. / Material	1.4571 / 1.4581 / 1.4581	DN 40/40
Typ 3.7 :	Wst. / Material	1.4571 / 1.4308	



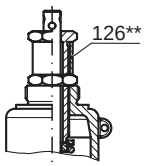
head G
gastight with handwheel
and lifting button



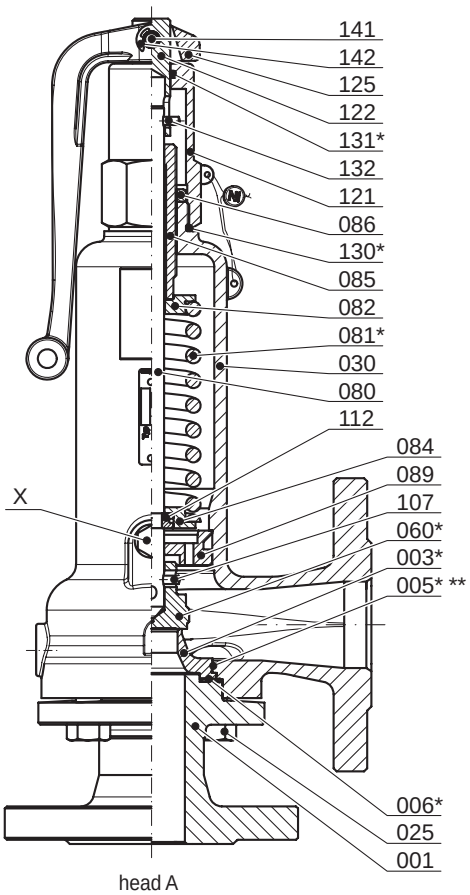
head F
gastight with handwheel



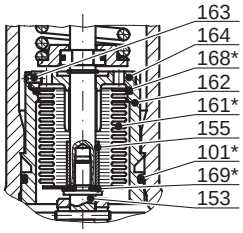
head C
gastight cap



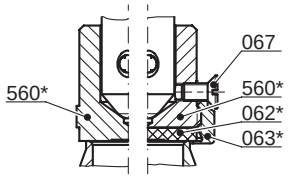
lock sleeve
on request



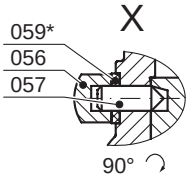
head A
gastight with lifting lever

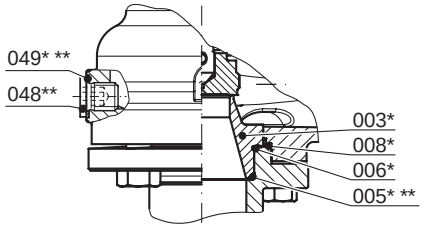


with bellow
on request



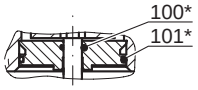
disc complete, pos. 060*
metal seated soft seated





drainage screw
on request

screw seat from PN 40



as overflowvalve
on request

Item	Description	Material 3.1	3.2	3.7
001	1 inlet body	1.0619 [1]	1.4581	1.4571
003*	1 seat	1.4571	1.4571	1.4571
005* **	1 o-ring	NBR	FPM	EPDM
006*	1 packing ring	TESNIT BAU		PTFE
008*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PVC	PVC	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4301	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.4305	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.4571	1.4571	1.4571
100*	1 o-ring	NBR	FPM	EPDM
101*	1 o-ring	NBR	FPM	EPDM

Item	Description	Material 3.1	3.2	3.7
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
123	1 lifting button (only head G)	1.4305	1.4305	
124	1 handwheel (only head F+G)	3.2581	3.2581	
125	1 lifting lever	3.2581	3.2581	
126**	1 lock sleeve	1.4305	1.4305	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
133	1 groove pin	A4	A4	
138	1 screw	A2	A2	
139	1 nut	A2	A2	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
146	1 washer	A2	A2	
153	1 bellow spindel	1.4571	1.4571	
155	1 bellow - lift stopper	1.4571	1.4571	
161*	1 bellow unit	1.4571	1.4571	
162	1 bellow housing	1.4571	1.4571	
163	1 locking screw	A2	A2	
164	1 spindel guide	1.4571	1.4571	
168*	1 upper sealing ring	PTFE	PTFE	
169*	1 lower sealing ring	PTFE	PTFE	

* expendable parts

[1] alternative 1.0460

head F + G as pressure controlvalve with handwheel

engl 02'07

Robinex AG
Bernstrasse 36
4663 Aarburg
Tel: 062 787 70 00
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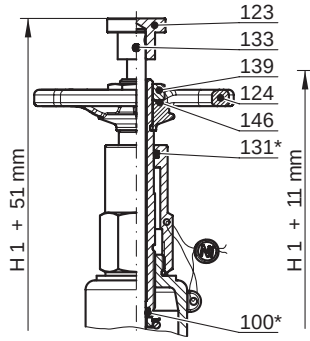
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

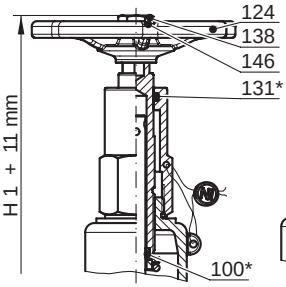
Typ 3

Typ 3.1 : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 3.2 : Wst. / Material 1.4571 / 1.4581 / 1.4581
Typ 3.7 : Wst. / Material 1.4571 / 1.4308

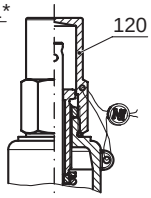
DN 50/50
DN 65/65



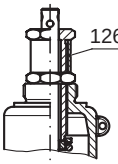
head G
gastight with handwheel
and lifting button



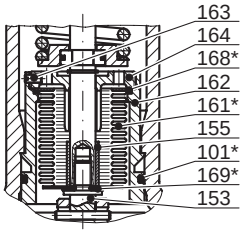
head F
gastight with handwheel



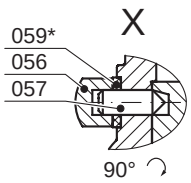
head C
gastight cap

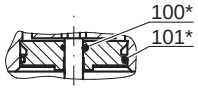


lock sleeve
on request

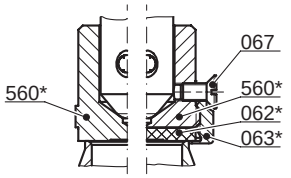


with bellow
on request

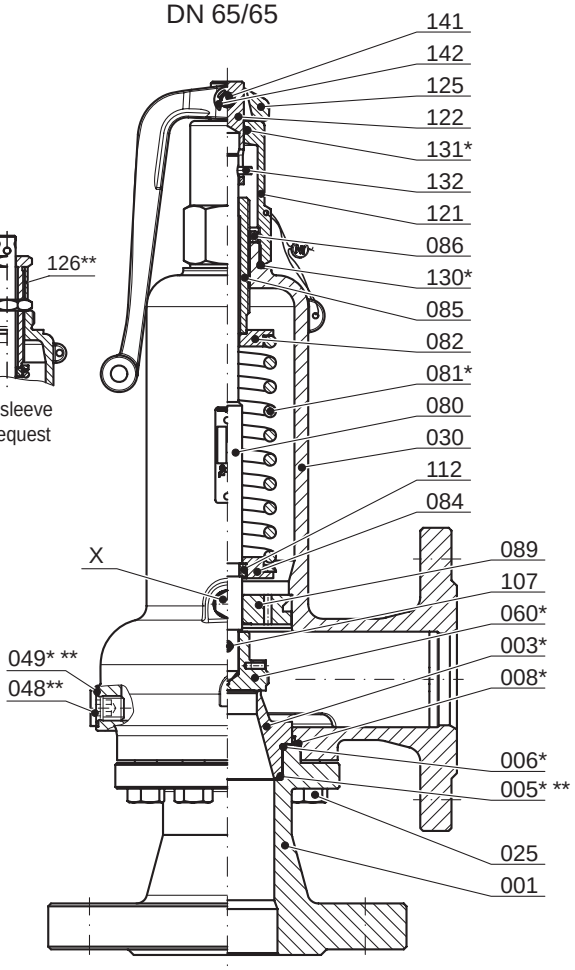




as overflowvalve
on request



disc complete, pos. 060*
metal seated soft seated



head A
gastight with lifting lever

Item	Description	Material 3.1	3.2	3.7	Item	Description	Material 3.1	3.2	3.7
001	1 inlet body	1.0619 [1]	1.4581	1.4571	107	1 spring pin	A2	A2	A2
003*	1 seat	1.4571	1.4571	1.4571	112	1 split ring	1.4305	1.4305	1.4305
005* **	1 o-ring	NBR	FPM	EPDM	120	1 cap (only head C)	1.0718	1.4581	1.4571
006*	1 packing ring	TESNIT BAU		PTFE	121	1 lifting cap (only head A)	1.4104	1.4581	
008*	1 packing ring	TESNIT BAU		PTFE	122	1 coupling	1.4305	1.4305	
025	8 screw	A2	A2	A2	123	1 lifting button (only head G)	1.4305	1.4305	
030	1 spring bonnet	1.0619	1.4581	1.4308	124	1 handwheel (only head F+G)	3.2581	3.2581	
048**	1 drainage screw	A4	A4	A4	125	1 lifting lever	3.2581	3.2581	
049* **	1 packing ring	Cu	PTFE	PTFE	126**	1 lock sleeve	1.4305	1.4305	
056	2 lock nut	A4	A4	A4	130*	1 o-ring	NBR	FPM	EPDM
057	2 screwed pin	A2	A2	A2	131*	1 o-ring	NBR	FPM	
059*	2 packing ring	PVC	PVC	PTFE	132	1 groove pin	A4	A4	
060*	1 disc, complete				133	1 groove pin	A4	A4	
560*	1 disc	1.4571	1.4571	1.4571	138	1 screw	A2	A2	
062*	1 soft sealing	see techn. appendic: KWD-1			139	1 nut	A2	A2	
063*	1 disc ring	1.4301	1.4571	1.4571	141	1 bolt	1.4305	1.4305	
067	1 security screw	A2	A2	A2	142	2 stop washer	A2	A2	
080	1 spindle	1.4104	1.4571	1.4571	146	1 washer	A2	A2	
081*	1 spring	1.4310	1.4310	1.4310	153	1 bellow spindel	1.4571	1.4571	
082	1 springplate, upper	1.0718	1.4305	1.4305	155	1 bellow - lift stopper	1.4571	1.4571	
084	1 springplate, lower	1.0718	1.4305	1.4305	161*	1 bellow unit	1.4571	1.4571	
085	1 adjusting screw	1.4305	1.4305	1.4305	162	1 bellow housing	1.4571	1.4571	
086	1 lock nut	1.4305	1.4305	1.4305	163	1 locking screw	A2	A2	
089	1 guide plate	1.4571	1.4571	1.4571	164	1 spindel guide	1.4571	1.4571	
100*	1 o-ring	NBR	FPM	EPDM	168*	1 upper sealing ring	PTFE	PTFE	
101*	1 o-ring	NBR	FPM	EPDM	169*	1 lower sealing ring	PTFE	PTFE	

* expendable parts

[1] alternative 1.0460

head F + G as pressure controlvalve with handwheel

engl 02'07

Robinex AG
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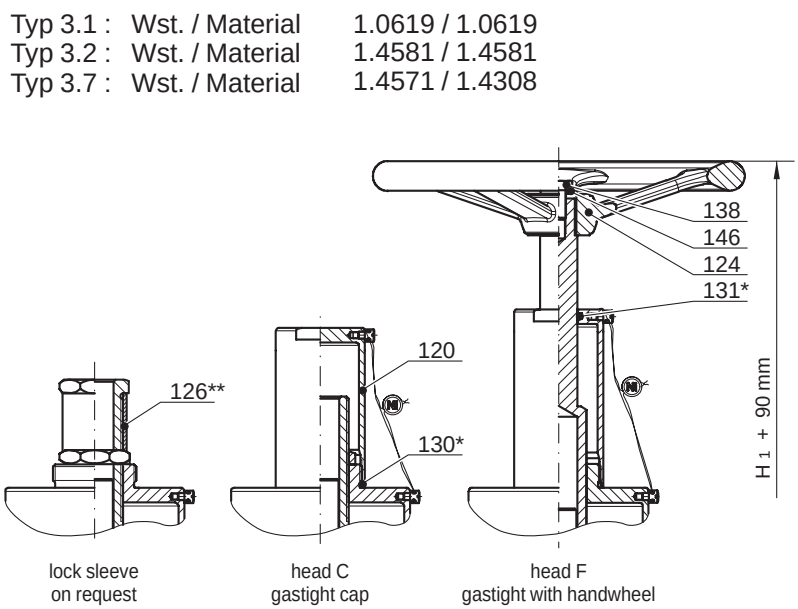
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 3

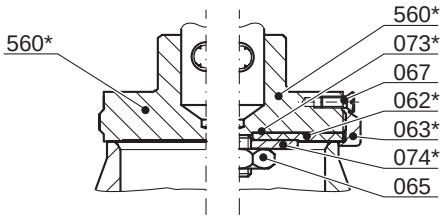
Typ 3.1 :	Wst. / Material	1.0619 / 1.0619
Typ 3.2 :	Wst. / Material	1.4581 / 1.4581
Typ 3.7 :	Wst. / Material	1.4571 / 1.4308



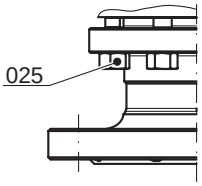
lock sleeve
on request

head C
gastight cap

head F
gastight with handwheel

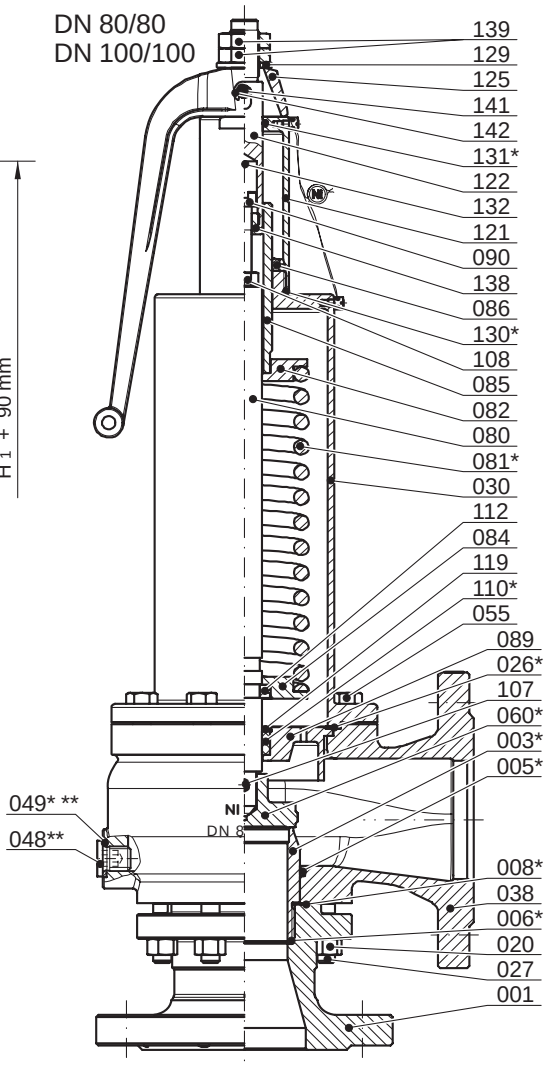


disc complete, pos. 060*
metal seated soft seated



DN 80

DN 80/80
DN 100/100



head A
gastight with lifting lever

Item	Description	Material 3.1	3.2	3.7	Item	Description	Material 3.1	3.2	3.7
001	1 inlet body	1.0619	1.4581	1.4571	084	1 springplate, lower	1.0718	1.4305	1.4305
003*	1 seat	1.4571	1.4571	1.4571	085	1 adjusting screw	1.4305	1.4305	1.4305
005*	1 o-ring	NBR	FPM	PTFE	086	1 lock nut	1.4305	1.4305	1.4305
006*	1 packing ring	PTFE	PTFE	PTFE	089	1 guide plate	1.0460	1.4571	1.4571
008*	1 packing ring	TESNIT BAU		PTFE	090	1 screw	A2	A2	A2
020	8 nut	A2	A2	A2	107	1 spring pin	A2	A2	A2
025	8 screw	A2	A2	A2	108	1 nut	A2	A2	A2
026*	1 packing ring	TESNIT BAU		PTFE	110*	1 bush	PTFE-Gr.	PTFE-Gr.	PTFE-Gr.
027	8 stud bolt	A2	A2	A2	112	1 split ring	1.4305	1.4305	1.4305
030	1 spring bonnet	1.0254	1.4571	1.4571	119	1 locking ring	A2	A2	A2
038	1 outlet body	1.0619	1.4581	1.4308	120	1 cap (only head C)	1.0254	1.4571	1.4571
048**	1 drainage screw	A4	A4	A4	121	1 lifting cap	1.0254	1.4571	
049* **	1 packing ring	Cu	PTFE	PTFE	122	1 coupling	1.4305	1.4305	
055	8 screw	A2	A2	A2	124	1 handwheel (only head F)	3.2581	3.2581	
060*	1 disc, complete				125	1 lifting lever	3.2581	3.2581	
560*	1 disc	1.4571	1.4571	1.4571	126**	1 lock sleeve	1.4305	1.4305	
062*	1 soft sealing	see techn. appendic: KWD-1			129	1 pressure plate	A2	A2	
063*	1 disc ring	1.4571	1.4571	1.4571	130*	1 o-ring	NBR	FPM	EPDM
065	1 disc bolt	A4	A4	A4	131*	1 o-ring	NBR	FPM	
067	1 security screw	A2	A2	A2	132	1 groove pin	A4	A4	
073*	1 o-ring	NBR	FPM	PTFE	138	1 screw	1.4305	1.4305	
074*	1 disc plate	1.4571	1.4571	1.4571	139	2 nut	A2	A2	
080	1 spindle	1.4104	1.4571	1.4571	141	1 bolt	1.4305	1.4305	
081*	1 spring	1.4310	1.4310	1.4310	142	2 stop washer	A2	A2	
082	1 springplate, upper	1.0718	1.4305	1.4305	146	1 washer	A2	A2	

engl 02'07

* expendable parts

head F as pressure controlvalve with handwheel

Robinex AG
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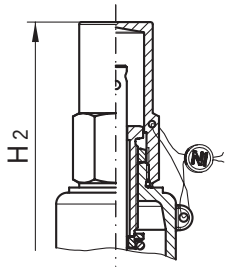
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

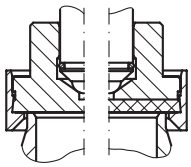
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

Typ 30.1 BG I : Wst. / Material 1.0460 / 0.7043
Typ 30.1 BG II+III : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 30.1 BG IV : Wst. / Material 1.0619 / 1.0619
Typ 30.2 : Wst. / Material 1.4571 / 1.4581 / 1.4581
Typ 30.7 : Wst. / Material 1.4571 / 1.4308

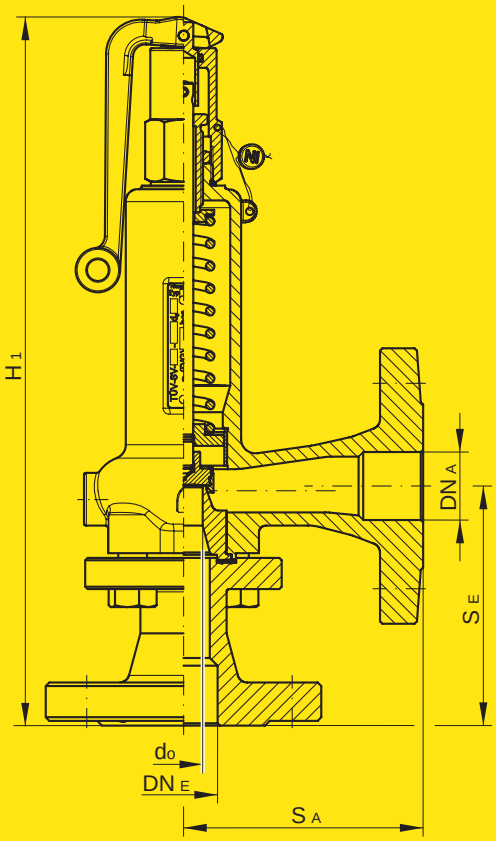


Kopf C / head C
gasdichte Kappe
gastight cap



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

BG I: TÜV • SV • XX-713 • do • D/G/F • α_d • p
BG II: TÜV • SV • XX-820 • do • D/G/F • α_d • p
BG III: TÜV • SV • XX-896 • do • D/G/F • α_d • p
BG IV: TÜV • SV • XX-902 • do • D/G/F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 30.1 BG I : -10°C bis / to 280°C (350°C[1])
Typ 30.1 BG II - IV : -60°C bis / to 350°C
Typ 30.2 BG I : -60°C bis / to 280°C (400°C[1])
Typ 30.2 BG II - IV : -60°C bis / to 350°C (400°C[1])
Typ 30.7 BG I - IV : -200°C bis / to 280°C (300°C[1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions		Ausflussziffer Coefficient		Ansprechdruck Set pressure		Gewicht Weight
	DN_{E} / NPS		PN_{E} / [bar]	do	S_E [2]	DN_{A} / NPS		PN_{A} / [bar]	S_A [2]	H_1	H_2	$\alpha_{d\ max}$	α_d	p_{min}	p_{max}	
	[mm]		class	[mm]	[mm]	[mm]		class	[mm]	[mm]	[mm]	D/G	F	[bar(g)]	[bar(g)]	[kg]
I	15	1/2	16-63 / 150-600	12,5	90	15	1/2	16-40 / 150-300	90	282	268	0,45	0,32	0,1	40	4,3
	20	3/4		12,5	95	20	3/4		95	287	273	0,45	0,32	0,1	40	4,3
	25	1		16	100	25	1		100	292	278	0,38	0,29	0,1	40	4,6
	25	1		18	100	25	1		100	292	278	0,38	0,22	0,05	20	4,6
II	32	1¼	16-63 / 150-600	20	105	32	1¼	16-40 / 150-300	105	395	375	0,43	0,34	0,1	40	9,6
	32	1¼		25	105	32	1¼		105	395	375	0,31	0,24	0,1	6	9,6
	40	1½		25	115	40	1½		115	405	385	0,41	0,32	0,1	40	10,0
	40	1½		32	115	40	1½		115	405	385	0,29	0,23	0,1	6	10,0
III	50	2	16-63 / 150-600	32	125	50	2	16-40 / 150-300	125	450	430	0,39	0,28	0,05	40	15,0
	50	2		40	125	50	2		125	450	430	0,31	0,23	0,05	6,5 [3]	15,0
	65	2½		40	145	65	2½		145	470	450	0,31	0,23	0,05	35	19,3
	65	2½		50	145	65	2½		145	470	450	0,28	0,21	0,05	7,5 [4]	19,3
IV	80	3	16-63 / 150-600	50	155	80	3	16-40 / 150	155	700	620	0,46	0,33	0,05	25	36,8
	80	3		58	155	80	3		155	700	620	0,41	0,29	0,05	6	36,8
	100	4		60	175	100	4		175	730	650	0,44	0,30	0,05	18	40,5
	100	4		70	175	100	4		175	730	650	0,40	0,28	0,05	6	40,5
												Sonderausführung / special design:		0,41	0,05	6

[1] Höhere Temperaturen auf Anfrage / higher temperatures on request
[2] Maß nach DIN EN 558-1 Grundreihe 8, andere auf Anfrage / ...
[3] Bei Flüssigkeiten bis 16 [bar(g)] / liquids up to 16 [bar(g)]
[4] Bei Flüssigkeiten bis 10 [bar(g)] / liquids up to 10 [bar(g)]

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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

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for steam, gases and liquids in closed completion

Typ 30

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [10^3 kg/h] / water at 68°F [10^3 kg/h]

Baugröße / Size	I			II				III				IV			
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	100	100
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	50	58	60	70	70
$\alpha_{d,\,max}$	0,32	0,29	0,22	0,34	0,24	0,32	0,23	0,28	0,23	0,23	0,21	0,33	0,29	0,30	0,28	0,41
p_e / [bar(g)]																
0,05			1,1					4,4	5,7	5,7	8,1	12,8	15,1	16,7	21,2	31,1
0,1	0,9	1,3	1,3	2,4	2,7	3,6	4,2	5,1	6,6	6,6	9,4	14,7	17,4	19,3	24,5	35,6
0,2	1,1	1,6	1,6	3,0	3,3	4,4	5,2	6,3	8,1	8,1	11,5	18,1	21,3	23,6	30,0	44,0
0,3	1,3	1,9	1,8	3,4	3,8	5,1	6,0	7,2	9,3	9,3	13,3	20,8	24,6	27,3	34,7	50,8
0,4	1,4	2,1	2,0	3,9	4,3	5,7	6,7	8,1	10,4	10,4	14,8	23,3	27,6	30,5	38,8	56,7
0,5	1,5	2,3	2,2	4,2	4,7	6,2	7,3	8,9	11,4	11,4	16,2	25,5	30,2	33,4	42,5	62,2
1,0	2,1	3,1	3,0	5,7	6,3	8,4	9,9	12,0	15,4	15,4	22,0	34,6	40,9	45,2	57,5	84,2
1,5	2,6	3,8	3,7	7,0	7,7	10,3	12,1	14,7	18,9	18,9	26,9	42,3	50,1	55,4	70,4	103,1
2,0	3,0	4,4	4,2	8,1	8,9	11,9	14,0	17,0	21,8	21,8	31,1	48,9	57,8	64,0	81,3	119,0
2,5	3,3	4,9	4,7	9,0	10,0	13,3	15,6	19,0	24,4	24,4	34,8	54,7	64,6	71,5	90,9	133,1
3,0	3,6	5,4	5,2	9,9	10,9	14,5	17,1	20,8	26,7	26,7	38,1	59,9	70,8	78,4	99,6	145,8
3,5	3,9	5,8	5,6	10,7	11,8	15,7	18,5	22,5	28,8	28,8	41,2	64,7	76,5	84,7	107,5	157,5
4,0	4,2	6,2	6,0	11,4	12,6	16,8	19,8	24,0	30,8	30,8	44,0	69,1	81,7	90,5	115,0	168,3
4,5	4,4	6,6	6,3	12,1	13,4	17,8	21,0	25,5	32,7	32,7	46,7	73,3	86,7	96,0	121,9	178,6
5	4,7	7,0	6,7	12,8	14,1	18,8	22,1	26,9	34,5	34,5	49,2	77,3	91,4	101,2	128,5	188,2
6	5,1	7,6	7,3	14,0	15,4	20,6	24,2	29,4	37,8	37,8	53,9	84,7	100,1	110,8	140,8	206,2
7	5,5	8,2	7,9	15,1		22,2		31,8	40,8	40,8	58,2	91,5		119,7		
8	5,9	8,8	8,4	16,1		23,8		34,0	43,6	43,6	62,2	97,8		128,0		
9	6,3	9,3	9,0	17,1		25,2		36,0	46,3	46,3	66,0	103,7		135,7		
10	6,6	9,8	9,4	18,0		26,6		38,0	48,8	48,8	69,6	109,3		143,1		
12	7,3	10,8	10,3	19,8		29,1		41,6	53,4	53,4		119,7		156,7		
14	7,8	11,6	11,2	21,4		31,4		44,9	57,7	57,7		129,3		169,3		
16	8,4	12,4	11,9	22,8		33,6		48,1	61,7	61,7		138,3		181,0		
18	8,9	13,2	12,7	24,2		35,6		51,0		65,4		146,6		192,0		
20	9,4	13,9	13,4	25,5		37,6		53,7		69,0		154,6				
25	10,5	15,6		28,6		42,0		60,1		77,1		172,8				
30	11,5	17,0		31,3		46,0		65,8		84,4						
35	12,4	18,4		33,8		49,7		71,1		91,2						
40	13,2	19,7		36,1		53,1		76,0								

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

01'06

Robinex AG
Bernstrasse 36
4663 Aarburg
Tel: 062 787 70 00
Fax: 062 787 70 01

Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

Baugröße / Size	I			II				III				IV				
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	100	100	
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	50	58	60	70	
α_d, max	0,45	0,38	0,28	0,43	0,31	0,41	0,29	0,39	0,31	0,31	0,28	0,46	0,41	0,44	0,40	
p_e / [bar(g)]																
0,05			25					100	128	128	182	287	339	375	477	
0,1	20	29	28	53	59	78	92	116	146	146	208	331	394	436	553	
0,2	25	36	34	64	72	94	110	140	178	178	254	401	478	531	669	
0,3	30	42	39	73	81	106	126	160	203	203	289	459	546	617	770	
0,4	33	46	43	80	88	117	138	177	224	224	317	508	603	686	854	
0,5	37	51	47	86	95	127	148	191	241	241	343	550	653	741	929	
1,0	64	88	81	150	167	219	256	341	423	423	603	986	1176	1350	1663	
1,5	74	102	95	174	194	256	298	406	500	500	708	1176	1409	1617	1990	
2,0	95	132	123	229	254	340	395	539	669	669	943	1553	1858	2139	2639	
2,5	112	155	144	271	305	402	468	635	788	788	1112	1827	2192	2517	3114	
3,0	127	175	164	310	349	462	535	720	894	894	1261	2072	2485	2854	3532	
3,5	143	198	184	349	394	521	603	811	1008	1008	1422	2336	2802	3218	3982	
4,0	158	219	204	387	436	576	668	898	1116	1116	1575	2587	3103	3563	4409	
4,5	174	241	225	426	480	635	736	990	1229	1229	1735	2850	3418	3925	4857	
5	189	262	244	463	522	690	799	1075	1335	1335	1885	3096	3713	4265	5277	
6	220	305	284	538	607	802	930	1250	1553	1553	2191	3600	4318	4959	6136	
7	251	348	324	615		916		1427		1772	2501	4110		5660		
8	282	391	364	690		1029		1603		1991		4616		6358		
9	313	433	404	766		1141		1778		2208		5120		7053		
10	344	476	444	841		1254		1954		2427		5628		7752		
12	406	562	524	993		1479		2305		2863		6638		9143		
14	467	646	603	1143		1703		2654		3296		7641		10525		
16	528	731	682	1292		1925		3000		3726		8639		11899		
18	589	815	760	1440		2146		3344		4154		9630		13265		
20	650	899	839	1590		2369		3691		4585		10629				
25	804	1113		1964		2931		4568		5673		13153				
30	958	1325		2343		3491		5440		6757						
35	1112	1538		2714		4051		6314		7841						
40	1265	1750		3095		4610		7185								

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

1'06

Robinex AG
Bernstrasse 36
4663 Aarburg
Tel: 062 787 70 00
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distributed by ROBINEX AG SA

Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

Volumenstromtabelle / Discharge capacities

Luft bei 0°C und 1013 mbar [m^3_n/h] / air at 32°F and 1013 mbar [m^3_n/h]

Baugröße / Size	I			II				III				IV				
DN Eintr. / Inlet	15 u. 20	25	25	32	32	40	40	50	50	65	65	80	80	100	100	
d_O / mm	12,5	16	18	20	25	25	32	32	40	40	50	50	58	60	70	
α_d, max	0,45	0,38	0,28	0,43	0,31	0,41	0,29	0,39	0,31	0,31	0,28	0,46	0,41	0,44	0,40	
p_e / [bar(g)]																
0,05			31					123	158	158	225	353	418	463	588	
0,1	25	37	35	67	74	99	116	146	184	184	262	417	497	549	697	
0,2	33	47	45	84	94	124	145	184	234	234	334	527	628	698	880	
0,3	41	57	53	100	111	146	172	219	277	277	395	628	746	844	1053	
0,4	47	65	61	113	126	167	195	252	318	318	450	720	855	973	1211	
0,5	54	75	68	127	140	186	218	281	354	354	504	808	959	1087	1364	
1,0	77	106	98	181	201	265	309	412	512	512	729	1193	1426	1632	2010	
1,5	100	138	128	237	263	347	404	552	679	679	962	1596	1912	2195	2702	
2,0	121	167	156	290	322	430	500	683	847	847	1195	1969	2354	2711	3345	
2,5	142	196	183	344	386	510	594	804	999	999	1410	2316	2778	3190	3947	
3,0	162	225	209	397	447	592	686	922	1145	1145	1616	2655	3184	3657	4525	
3,5	183	253	236	448	504	667	773	1040	1291	1291	1822	2994	3591	4124	5103	
4,0	204	282	263	499	562	743	861	1158	1438	1438	2029	3333	3998	4591	5681	
4,5	225	311	290	549	619	818	948	1275	1584	1584	2235	3672	4404	5058	6259	
5	245	339	317	600	676	894	1036	1393	1730	1730	2442	4012	4811	5526	6837	
6	287	397	370	702	790	1045	1211	1629	2023	2023	2855	4691	5626	6461	7995	
7	328	454	424	803		1197		1865		2316	3269	5370		7397		
8	370	512	477	905		1348		2101		2610		6050		8334		
9	412	569	531	1007		1500		2337		2903		6731		9271		
10	453	627	585	1109		1651		2574		3197		7412		10209		
12	537	742	692	1312		1955		3047		3785		8775		12086		
14	620	858	800	1517		2259		3521		4373		10139		13966		
16	704	973	908	1721		2564		3996		4963		11506		15848		
18	787	1089	1016	1926		2869		4471		5553		12875		17733		
20	871	1205	1124	2131		3174		4947		6144		14245				
25	1081	1495		2644		3939		6139		7625		17678				
30	1292	1795		3159		4707		7335		9111						
35	1503	2079		3676		5477		8536		10601						
40	1715	2373		4195		6250		9740								

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

Robinex AG
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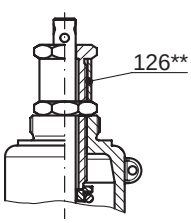
1'06

Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

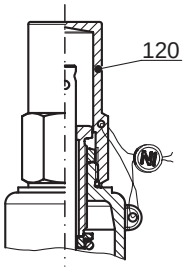
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

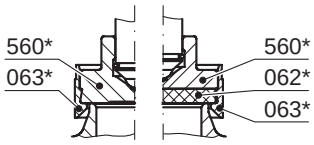
Typ 30.1:	Wst. / Material	1.0460 / 0.7043	DN 15/15
Typ 30.2:	Wst. / Material	1.4571 / 1.4581	DN 20/20
Typ 30.7:	Wst. / Material	1.4571 / 1.4308	DN 25/25



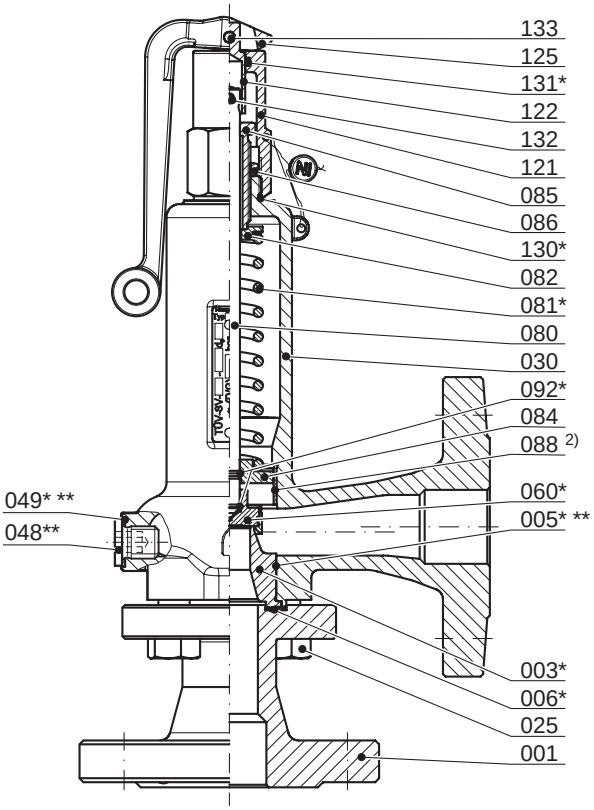
lock sleeve
on request



head C
gastight cap



disc complete, pos. 060*
metal seated soft seated



head A
gastight with lifting lever

Item	Description	Material 30.1	30.2	30.7
001	1 inlet body	1.0460	1.4571	1.4571
003*	1 seat	1.4104	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	0.7043	1.4581	1.4308
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
080	1 spindel	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.4571	1.4571	1.4571
085	1 adjusting screw	1.4305	1.4305	1.4571
086	1 lock nut	1.0718	1.4305	1.4305
088 2)	1 guide bush	1.4571		
092*	2 lock ring	1.4571	1.4571	1.4571

Item	Description		Material 30.1	30.2	30.7
120	1 cap	(only head C)	1.0718	1.4581	1.4571
121	1 lifting cap	(only head A)	1.4104	1.4581	
122	1 coupling		1.4305	1.4305	
125	1 lifting lever		3.2581	3.2581	
130*	1 o-ring		NBR	FPM	EPDM
131*	1 o-ring		NBR	FPM	
132	1 groove pin		A4	A4	
133	1 groove pin		A4	A4	
	on request				
005* **	1 o-ring		NBR	FPM	EPDM
048**	1 drainage screw		A4	A4	A4
049* **	1 Dichtring		Cu	PTFE	PTFE
126**	1 packing ring		1.4305	1.4305	

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* expendable parts

** optional design, on request

2) only in type 30.1

Robinex AG
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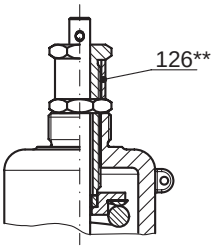
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

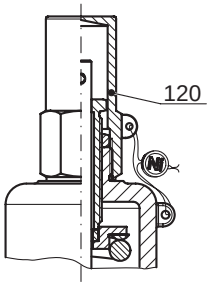
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

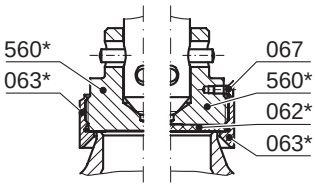
Typ 30.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 32/32
Typ 30.2 :	Wst. / Material	1.4571 / 1.4581	DN 40/40
Typ 30.7 :	Wst. / Material	1.4571 / 1.4308	



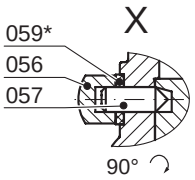
lock sleeve
on request

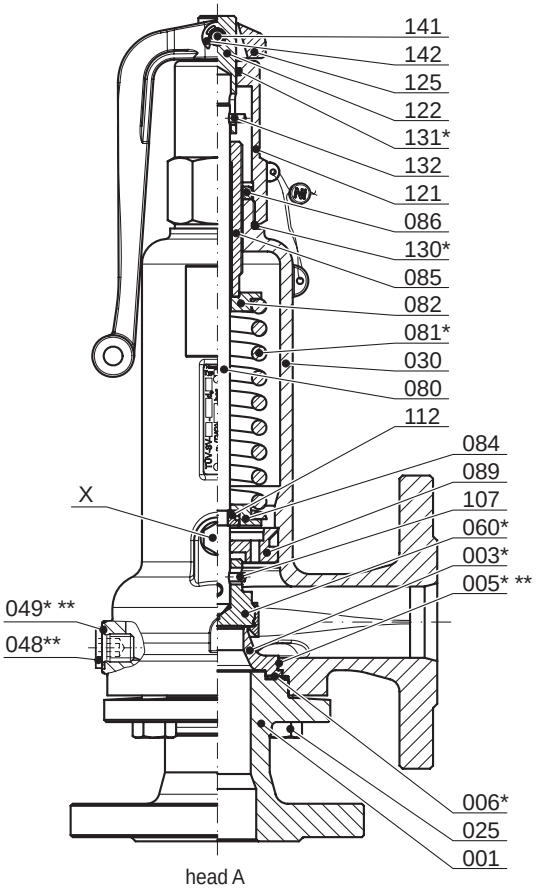


head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 30.1	30.2	30.7
001	1 inlet body	1.0460 [1)]	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PTFE	PTFE	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.4305	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.4571	1.4571	1.4571

Item	Description	Material 30.1	30.2	30.7
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

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* expendable parts

** optional design, on request

[1)] alternative 1.0619

Robinex AG
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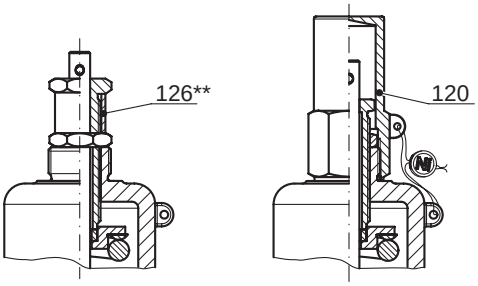
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

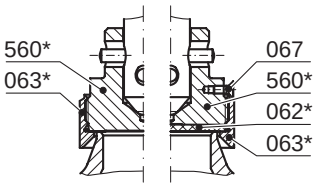
Typ 30

Typ 30.1 : Wst. / Material 1.0460, 1.0619 / 1.0619 DN 50/50
Typ 30.2 : Wst. / Material 1.4571 / 1.4581 DN 65/65
Typ 30.7 : Wst. / Material 1.4571 / 1.4308

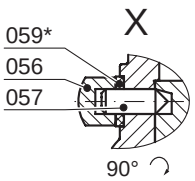


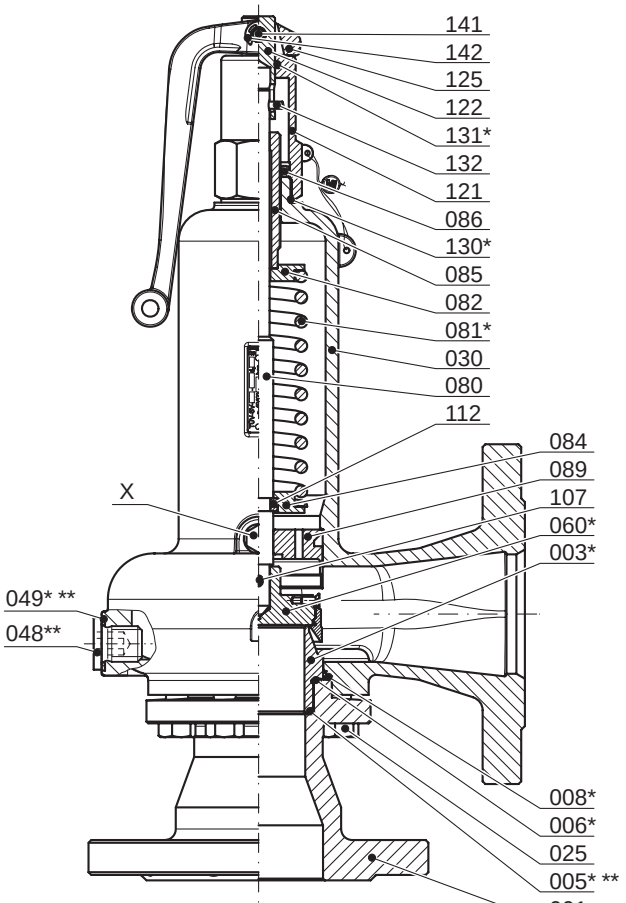
lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 30.1	30.2	30.7
001	1 inlet body	1.0460 [1]	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
008	1 packing ring	TESNIT BAU		PTFE
025	8 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PTFE	PTFE	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305

Item	Description	Material 30.1	30.2	30.7
089	1 guide plate	1.4571	1.4571	1.4571
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

_engl 0207

* expendable parts

** optional design, on request

[1] alternative 1.0619

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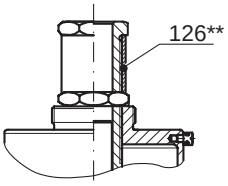
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

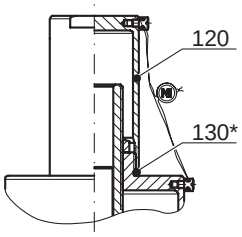
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 30

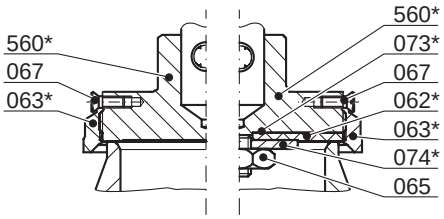
Typ 30.1 :	Wst. / Material	1.0619 / 1.0619
Typ 30.2 :	Wst. / Material	1.4581 / 1.4581
Typ 30.7 :	Wst. / Material	1.4571 / 1.4308



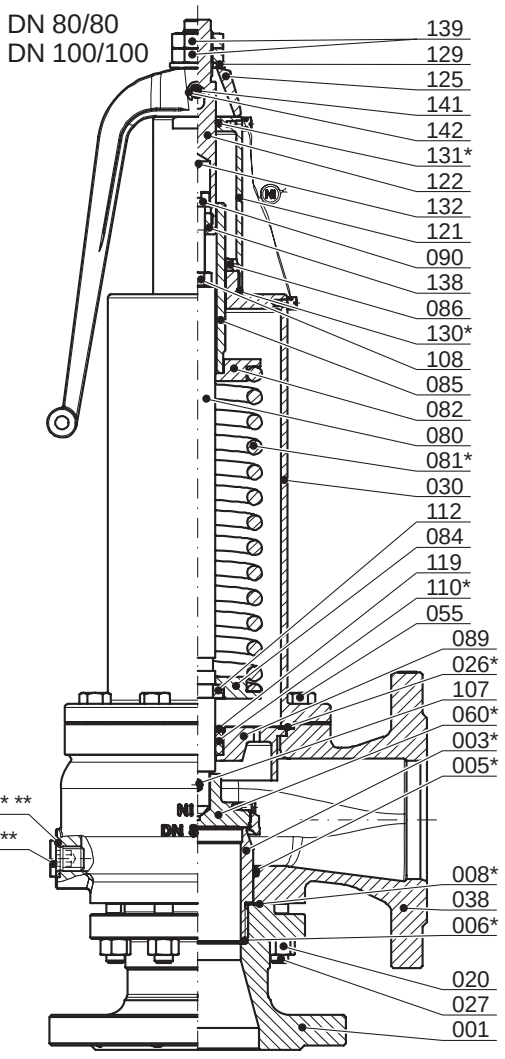
lock sleeve
on request

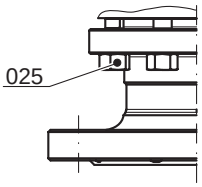


head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





DN 80

head A
gastight with lifting lever

Item	Description	Material 30.1	30.2	30.7
001	1 inlet body	1.0619	1.4581	1.4571
003*	1 seat	1.4571	1.4571	1.4571
005*	1 o-ring	NBR	FPM	EPDM
006*	1 packing ring	PTFE	PTFE	PTFE
008*	1 packing ring	TESNIT BAU		PTFE
020	8 nut	A2	A2	A2
025	8 screw	A2	A2	A2
026*	1 packing ring	TESNIT BAU		PTFE
027	8 stud bolt	A2	A2	A2
030	1 spring bonnet	1.0254	1.4571	1.4571
038	1 outlet body	1.0619	1.4581	1.4308
055	8 screw	A2	A2	A2
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
065	1 disc bolt	A4	A4	A4
067	1 security screw	A2	A2	A2
073*	1 o-ring	NBR	FPM	PTFE
074*	1 disc plate	1.4571	1.4571	1.4571
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305

Item	Description	Material 30.1	30.2	30.7
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.0460	1.4571	1.4571
090	1 screw	A2	A2	A2
107	1 spring pin	A2	A2	A2
108	1 nut	A2	A2	A2
110*	1 bush	PTFE-Gr.	PTFE-Gr.	PTFE-Gr.
112	1 split ring	1.4305	1.4305	1.4305
119	1 locking ring	A2	A2	A2
120	1 cap (only head C)	1.0254	1.4571	1.4571
121	1 lifting cap	1.0254	1.4571	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
129	1 pressure plate	A2	A2	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
138	1 screw	1.4305	1.4305	
139	2 nut	A2	A2	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

*... expendable parts

Robinex AG
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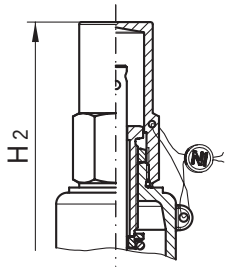
distributed by ROBINEX AG SA

Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

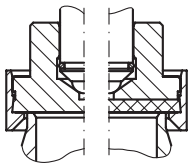
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

Typ 31.1 BG I : Wst. / Material 1.0460 / 0.7043
Typ 31.1 BG II+III : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 31.1 BG IV : Wst. / Material 1.0619 / 1.0619
Typ 31.2 : Wst. / Material 1.4571 / 1.4581 / 1.4581
Typ 31.7 : Wst. / Material 1.4571 / 1.4308

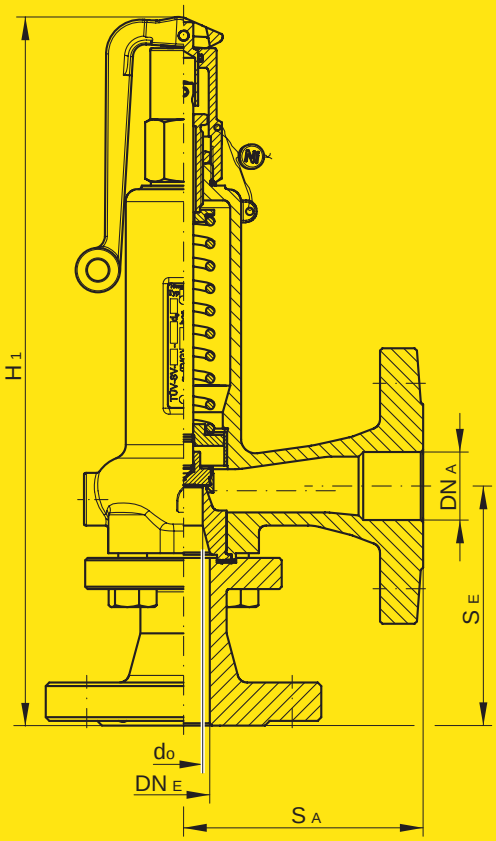


Kopf C / head C
gasdichte Kappe
gastight cap



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

BG I: TÜV • SV • XX-713 • do • D/G/F • α_d • p
BG II: TÜV • SV • XX-820 • do • D/G/F • α_d • p
BG III: TÜV • SV • XX-896 • do • D/G/F • α_d • p
BG IV: TÜV • SV • XX-902 • do • D/G/F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 30.1 BG I : -10°C bis / to 280°C (350°C[1])
Typ 30.1 BG II - IV : -60°C bis / to 350°C
Typ 30.2 BG I : -60°C bis / to 280°C (400°C[1])
Typ 30.2 BG II - IV : -60°C bis / to 350°C (400°C[1])
Typ 30.7 BG I - IV : -200°C bis / to 280°C (300°C[1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions		Ausflussziffer Coefficient		Ansprechdruck Set pressure		Gewicht Weight
	$DN_{E/NPS}$		$PN_{E/[bar]}$	d_o	S_E[2]	$DN_{A/NPS}$		$PN_{A/[bar]}$	S_A[2]	H_1	H_2	$\alpha_{d\,max}$	α_d	p_{min}	p_{max}	
	[mm]		class	[mm]	[mm]	[mm]		class	[mm]	[mm]	[mm]	D/G	F	[bar(g)]	[bar(g)]	[kg]
I	15	1/2	16-63	12,5	90	20	3/4	16-40	95	282	268	0,45	0,32	0,1	40	4,3
	20	3/4	150-600	16	95	25	1	150-300	100	287	273	0,38	0,29	0,1	40	4,5
	20	3/4		18	95	25	1		100	287	273	0,28	0,22	0,05	20	4,6
II	25	1	16-63	20	105	32	1¼	16-40	105	395	375	0,43	0,34	0,1	40	9,6
	32	1¼	150-600	25	115	40	1½	150-300	115	405	385	0,41	0,32	0,1	40	10,0
III	40	1½	16-63	32	125	50	2	16-40	125	450	430	0,39	0,28	0,05	40	15,0
	50	2	150-600	40	145	65	2½	150-300	145	470	450	0,31	0,23	0,05	35	19,3
IV	65	2½	16-63	50	155	80	3	16-40	155	700	620	0,46	0,33	0,05	25	36,8
	80	3	150-600	60	175	100	4	150	175	730	650	0,44	0,30	0,05	18	40,5

1) Höhere Temperaturen auf Anfrage / higher temperatures on request

2) Maß nach DIN EN 558-1 Grundreihe 8, andere auf Anfrage / measure according to DIN EN 558-1 row 8, other on request

Robinex AG
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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [10^3 kg/h] / water at 68°F [10^3 kg/h]

Baugröße / Size	I			II		III		IV	
DN Eintr. / Inlet	15	20	20	25	32	40	50	65	80
d_o / mm	12,5	16	18	20	25	32	40	50	50
α_d, max	0,32	0,29	0,22	0,34	0,32	0,28	0,23	0,33	0,30
p_e / [bar(g)]									
0,05			1,1			4,4	5,7	12,8	16,7
0,1	0,9	1,3	1,3	2,4	3,6	5,1	6,6	14,7	19,3
0,2	1,1	1,6	1,6	3,0	4,4	6,3	8,1	18,1	23,6
0,3	1,3	1,9	1,8	3,4	5,1	7,2	9,3	20,8	27,3
0,4	1,4	2,1	2,0	3,9	5,7	8,1	10,4	23,3	30,5
0,5	1,5	2,3	2,2	4,2	6,2	8,9	11,4	25,5	33,4
1,0	2,1	3,1	3,0	5,7	8,4	12,0	15,4	34,6	45,2
1,5	2,6	3,8	3,7	7,0	10,3	14,7	18,9	42,3	55,4
2,0	3,0	4,4	4,2	8,1	11,9	17,0	21,8	48,9	64,0
2,5	3,3	4,9	4,7	9,0	13,3	19,0	24,4	54,7	71,5
3,0	3,6	5,4	5,2	9,9	14,5	20,8	26,7	59,9	78,4
3,5	3,9	5,8	5,6	10,7	15,7	22,5	28,8	64,7	84,7
4,0	4,2	6,2	6,0	11,4	16,8	24,0	30,8	69,1	90,5
4,5	4,4	6,6	6,3	12,1	17,8	25,5	32,7	73,3	96,0
5	4,7	7,0	6,7	12,8	18,8	26,9	34,5	77,3	101,2
6	5,1	7,6	7,3	14,0	20,6	29,4	37,8	84,7	110,8
7	5,5	8,2	7,9	15,1	22,2	31,8	40,8	91,5	119,7
8	5,9	8,8	8,4	16,1	23,8	34,0	43,6	97,8	128,0
9	6,3	9,3	9,0	17,1	25,2	36,0	46,3	103,7	135,7
10	6,6	9,8	9,4	18,0	26,6	38,0	48,8	109,3	143,1
12	7,3	10,8	10,3	19,8	29,1	41,6	53,4	119,7	156,7
14	7,8	11,6	11,2	21,4	31,4	44,9	57,7	129,3	169,3
16	8,4	12,4	11,9	22,8	33,6	48,1	61,7	138,3	181,0
18	8,9	13,2	12,7	24,2	35,6	51,0	65,4	146,6	192,0
20	9,4	13,9	13,4	25,5	37,6	53,7	69,0	154,6	
25	10,5	15,6		28,6	42,0	60,1	77,1	172,8	
30	11,5	17,0		31,3	46,0	65,8	84,4		
35	12,4	18,4		33,8	49,7	71,1	91,2		
40	13,2	19,7		36,1	53,1	76,0			

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

Robinex AG
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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

Baugröße / Size	I			II		III		IV	
DN Eintr. / Inlet	15	20	20	25	32	40	50	65	80
d_o / mm	12,5	16	18	20	25	32	40	50	60
α_d, max	0,45	0,38	0,28	0,43	0,41	0,39	0,31	0,46	0,44
p_e / [bar(g)]									
0,05			25			100	128	287	375
0,1	20	29	28	53	78	116	146	331	436
0,2	25	36	34	64	94	140	178	401	531
0,3	30	42	39	73	106	160	203	459	617
0,4	33	46	43	80	117	177	224	508	686
0,5	37	51	47	86	127	191	241	550	741
1,0	64	88	81	150	219	341	423	986	1350
1,5	74	102	95	174	256	406	500	1176	1617
2,0	95	132	123	229	340	539	669	1553	2139
2,5	112	155	144	271	402	635	788	1827	2517
3,0	127	175	164	310	462	720	894	2072	2854
3,5	143	198	184	349	521	811	1008	2336	3218
4,0	158	219	204	387	576	898	1116	2587	3563
4,5	174	241	225	426	635	990	1229	2850	3925
5	189	262	244	463	690	1075	1335	3096	4265
6	220	305	284	538	802	1250	1553	3600	4959
7	251	348	324	615	916	1427	1772	4110	5660
8	282	391	364	690	1029	1603	1991	4616	6358
9	313	433	404	766	1141	1778	2208	5120	7053
10	344	476	444	841	1254	1954	2427	5628	7752
12	406	562	524	993	1479	2305	2863	6638	9143
14	467	646	603	1143	1703	2654	3296	7641	10525
16	528	731	682	1292	1925	3000	3726	8639	11899
18	589	815	760	1440	2146	3344	4154	9630	13265
20	650	899	839	1590	2369	3691	4585	10629	
25	804	1113		1964	2931	4568	5673	13153	
30	958	1325		2343	3491	5440	6757		
35	1112	1538		2714	4051	6314	7841		
40	1265	1750		3095	4610	7185			

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

1'06

Robinex AG
Bernstrasse 36
4663 Aarburg
Tel: 062 787 70 00
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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

Volumenstromtabelle / Discharge capacities

Luft bei 0°C und 1013 mbar [m^3_n/h] / air at 32°F and 1013 mbar [m^3_n/h]

Baugröße / Size	I			II		III		IV	
DN Eintr. / Inlet	15	20	20	25	32	40	50	65	80
d_o / mm	12,5	16	18	20	25	32	40	50	60
α_d, max	0,45	0,38	0,28	0,43	0,41	0,39	0,31	0,46	0,44
p_e / [bar(g)]									
0,05			31			123	158	353	463
0,1	25	37	35	67	99	146	184	417	549
0,2	33	47	45	84	124	184	234	527	698
0,3	41	57	53	100	146	219	277	628	844
0,4	47	65	61	113	167	252	318	720	973
0,5	54	75	68	127	186	281	354	808	1087
1,0	77	106	98	181	265	412	512	1193	1632
1,5	100	138	128	237	347	552	679	1596	2195
2,0	121	167	156	290	430	683	847	1969	2711
2,5	142	196	183	344	510	804	999	2316	3190
3,0	162	225	209	397	592	922	1145	2655	3657
3,5	183	253	236	448	667	1040	1291	2994	4124
4,0	204	282	263	499	743	1158	1438	3333	4591
4,5	225	311	290	549	818	1275	1584	3672	5058
5	245	339	317	600	894	1393	1730	4012	5526
6	287	397	370	702	1045	1629	2023	4691	6461
7	328	454	424	803	1197	1865	2316	5370	7397
8	370	512	477	905	1348	2101	2610	6050	8334
9	412	569	531	1007	1500	2337	2903	6731	9271
10	453	627	585	1109	1651	2574	3197	7412	10209
12	537	742	692	1312	1955	3047	3785	8775	12086
14	620	858	800	1517	2259	3521	4373	10139	13966
16	704	973	908	1721	2564	3996	4963	11506	15848
18	787	1089	1016	1926	2869	4471	5553	12875	17733
20	871	1205	1124	2131	3174	4947	6144	14245	
25	1081	1495		2644	3939	6139	7625	17678	
30	1292	1795		3159	4707	7335	9111		
35	1503	2079		3676	5477	8536	10601		
40	1715	2373		4195	6250	9740			

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

1'06

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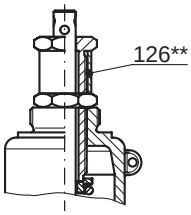
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

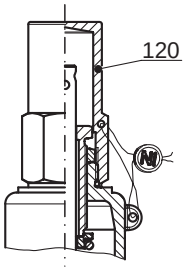
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

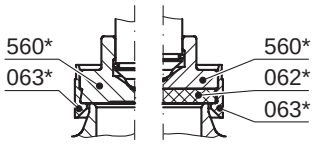
Typ 31.1: Wst. / Material 1.0460 / 0.7043 DN 15/20
Typ 31.2: Wst. / Material 1.4571 / 1.4581 DN 20/25
Typ 31.7: Wst. / Material 1.4571 / 1.4308



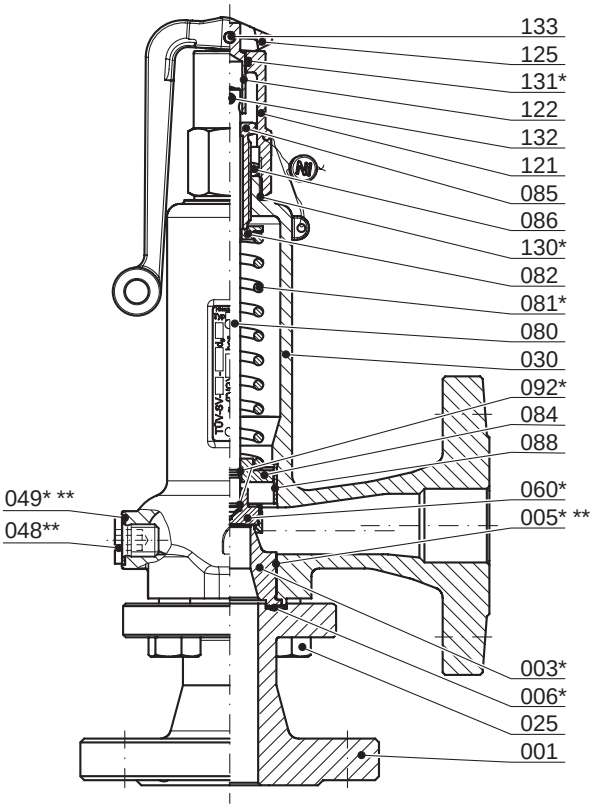
lock sleeve
on request



head C
gastight cap



disc complete, pos. 060*
metal seated soft seated



head A
gastight with lifting lever

Item	Description	Material 31.1	31.2	31.7
001	1 inlet body	1.0460	1.4571	1.4571
003*	1 seat	1.4104	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	0.7043	1.4581	1.4308
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
080	1 spindel	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.4571	1.4571	1.4571
085	1 adjusting screw	1.4305	1.4305	1.4571
086	1 lock nut	1.0718	1.4305	1.4305
088 [2)]	1 guide bush	1.4571		
092*	2 lock ring	1.4571	1.4571	1.4571

Item	Description	Material 31.1	31.2	31.7
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
133	1 groove pin	A4	A4	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 Dichtring	Cu	PTFE	PTFE
126**	1 packing ring	1.4305	1.4305	

engl 02'07

* expendable parts

** optional design, on request

[2)] only in type 31.1

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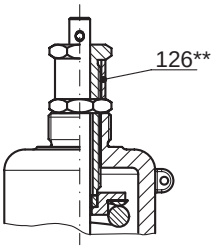
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

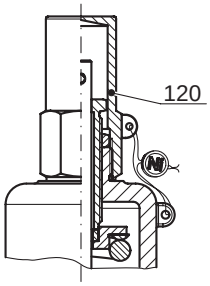
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

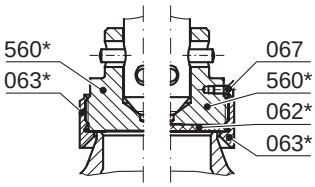
Typ 31.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 25/32
Typ 31.2 :	Wst. / Material	1.4571 / 1.4581	DN 32/40
Typ 31.7 :	Wst. / Material	1.4571 / 1.4308	



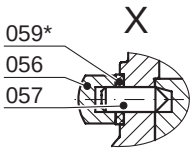
lock sleeve
on request

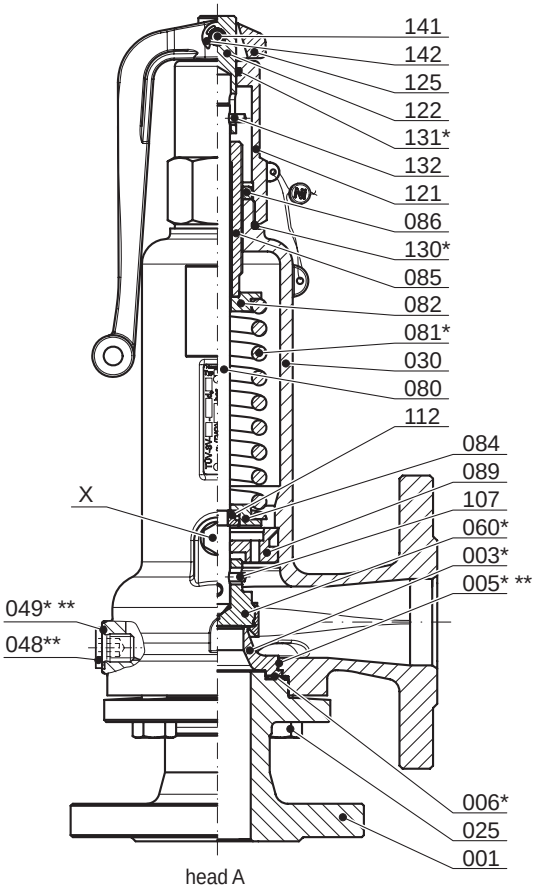


head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 31.1	31.2	31.7
001	1 inlet body	1.0460 [1)]	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PTFE	PTFE	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.4305	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.4571	1.4571	1.4571

Item	Description	Material 31.1	31.2	31.7
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

_engl 02'07

* expendable parts

** optional design, on request

[1)] alternative 1.0619

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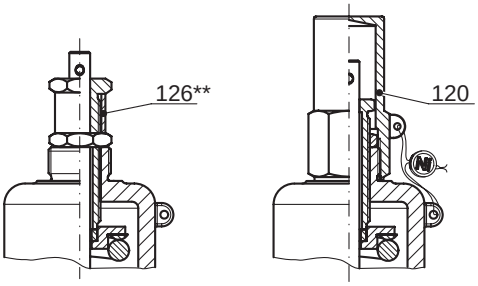
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

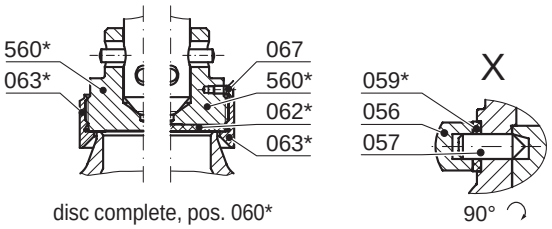
Typ 31

Typ 31.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 40/50
Typ 31.2 :	Wst. / Material	1.4571 / 1.4581	DN 50/65
Typ 31.7 :	Wst. / Material	1.4571 / 1.4308	

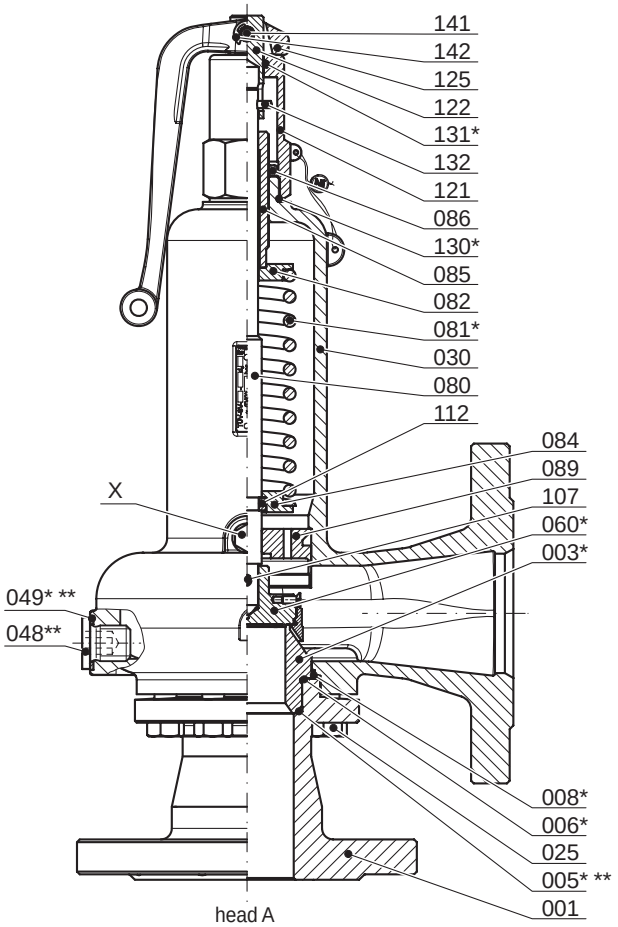


lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated



head A
gastight with lifting lever

Item	Description	Material 31.1	31.2	31.7
001	1 inlet body	1.0460 [1)]	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
008*	1 packing ring	TESNIT BAU		PTFE
025	8 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PTFE	PTFE	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305

Item	Description	Material 31.1	31.2	31.7
089	1 guide plate	1.4571	1.4571	1.4571
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

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* expendable parts

** optional design, on request

[1)] alternative 1.0619

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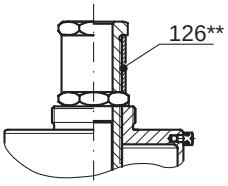
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

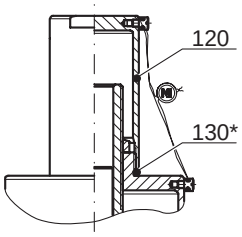
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 31

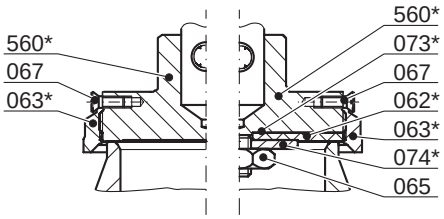
Typ 31.1 :	Wst. / Material	1.0619 / 1.0619
Typ 31.2 :	Wst. / Material	1.4581 / 1.4581
Typ 31.7 :	Wst. / Material	1.4571 / 1.4308



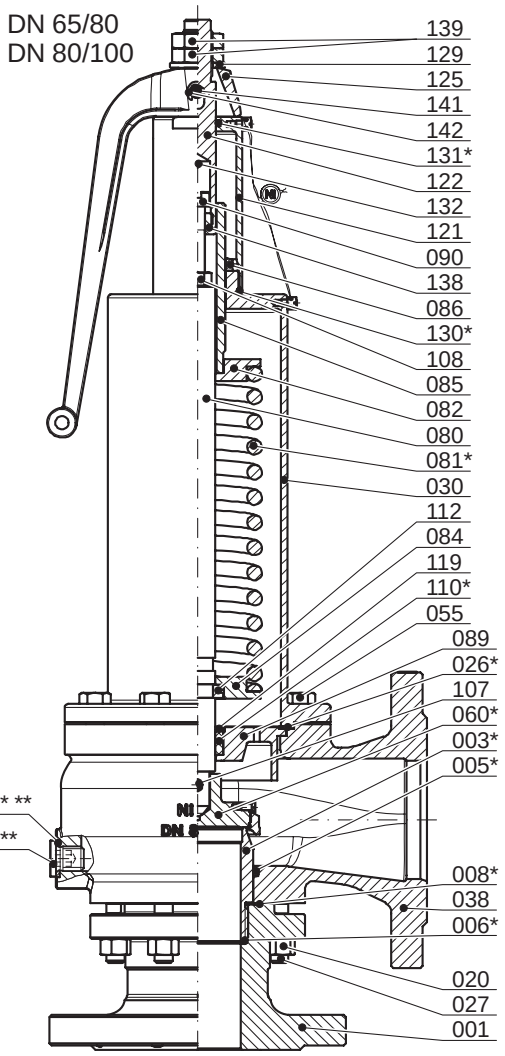
lock sleeve
on request

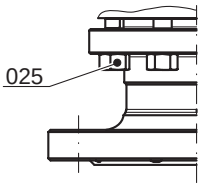


head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





DN 80

head A
gastight with lifting lever

Item	Description	Material 31.1	31.2	31.7
001	1 inlet body	1.0619	1.4581	1.4571
003*	1 seat	1.4571	1.4571	1.4571
005*	1 o-ring	NBR	FPM	EPDM
006*	1 packing ring	PTFE	PTFE	PTFE
008*	1 packing ring	TESNIT BAU		PTFE
020	8 nut	A2	A2	A2
025	8 screw	A2	A2	A2
026*	1 packing ring	TESNIT BAU		PTFE
027	8 stud bolt	A2	A2	A2
030	1 spring bonnet	1.0254	1.4571	1.4571
038	1 outlet body	1.0619	1.4581	1.4308
055	8 screw	A2	A2	A2
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
065	1 disc bolt	A4	A4	A4
067	1 security screw	A2	A2	A2
073*	1 o-ring	NBR	FPM	PTFE
074*	1 disc plate	1.4571	1.4571	1.4571
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305

Item	Description	Material 31.1	31.2	31.7
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.0460	1.4571	1.4571
090	1 screw	A2	A2	A2
107	1 spring pin	A2	A2	A2
108	1 nut	A2	A2	A2
110*	1 bush	PTFE-Gr.	PTFE-Gr.	PTFE-Gr.
112	1 split ring	1.4305	1.4305	1.4305
119	1 locking ring	A2	A2	A2
120	1 cap (only head C)	1.0254	1.4571	1.4571
121	1 lifting cap	1.0254	1.4571	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
129	1 pressure plate	A2	A2	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
138	1 screw	1.4305	1.4305	
139	2 nut	A2	A2	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

*... expendable parts

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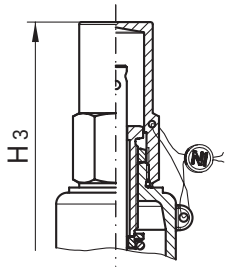
Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

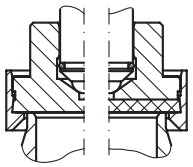
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 32

Typ 32.1 BG I : Wst. / Material 1.0460 / 0.7043
Typ 32.1 BG II+III : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 32.1 BG IV : Wst. / Material 1.0619 / 1.0619
Typ 32.2 : Wst. / Material 1.4571 / 1.4581 / 1.4581
Typ 32.7 : Wst. / Material 1.4571 / 1.4308

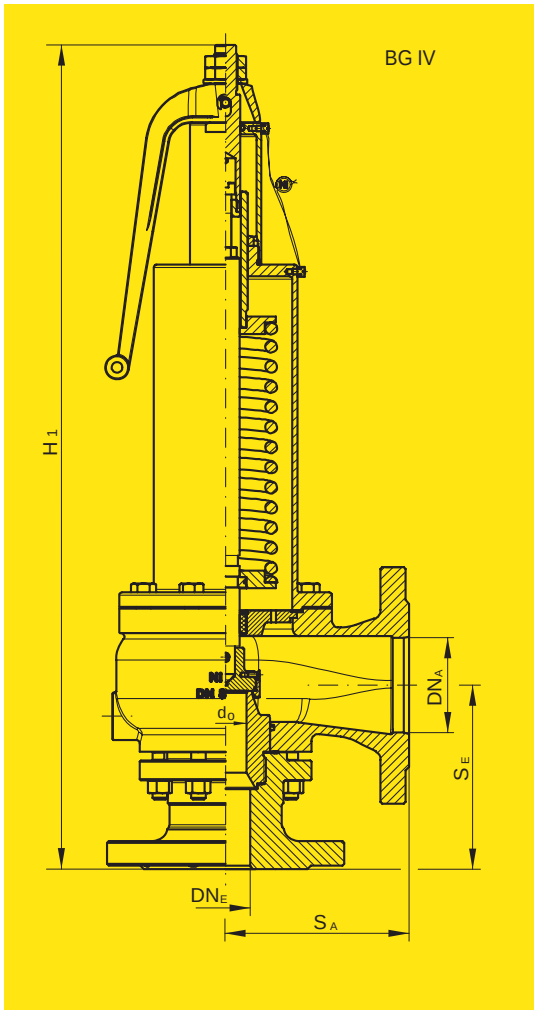


Kopf C / head C
gasdichte Kappe
gastight cap



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

BG I: TÜV • SV • XX-906 • do • D/G • α_d • p
BG I: TÜV • SV • XX-920 • do • D/G/F • α_d • p
BG II: TÜV • SV • XX-887 • do • D/G/F • α_d • p
BG III: TÜV • SV • XX-900 • do • D/G/F • α_d • p
BG IV: TÜV • SV • XX-901 • do • D/G/F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 32.1 BG I : -10°C bis / to 280°C (350°C [1])
Typ 32.1 BG II - IV : -10°C bis / to 350°C
Typ 32.2 BG I : -60°C bis / to 280°C (400°C [1])
Typ 32.2 BG II - IV : -60°C bis / to 350°C (400°C [1])
Typ 32.7 BG I - IV : -200°C bis / to 280°C (300°C [1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions		Ausflussziffer Coefficient		Ansprechdruck Set pressure		Gewicht Weight
	$DN_{E/NPS}$		$PN_{E/[bar]}$	d_o	S_E [2]	$DN_{A/NPS}$		$PN_{A/[bar]}$	S_A [2]	H_1	H_3	$\alpha_{d\,max}$	α_d	p_{min}	p_{max}	
	[mm]		class	[mm]	[mm]	[mm]		class	[mm]	[mm]	[mm]	D/G	F	[bar(g)]	[bar(g)]	[kg]
I	15	1/2	63-160	8	105	25	1	16-40	100	297	283	0,79		9	120	4,6
	15	1/2	250	8	115	25	1	150-300	100	307	293	0,79		121	220	4,6
	15	1/2	16-40	12,5	90	25	1		100	282	268	0,59	0,41	0,2	40	4,6
			150-600													
II	20	3/4	16-63	16	105	32	1¼	16-40	105	395	375	0,68	0,47	0,1	40	9,6
	25	1	150-600	20	115	40	1½	150-300	115	405	385	0,54	0,44	0,1	40	10,0
III	32	1¼	16-63	25	125	50	2	16-40	125	450	430	0,68	0,50	0,1	40	15,0
	40	1½	150-600	32	145	65	2½	150-300	145	470	450	0,55	0,36	0,1	25	19,3
IV	50	2	16-63	40	155	80	3	16-40	155	700	620	0,61	0,42	0,1	25	36,8
	65	2½	150-600	50	175	100	4	150	175	Sonderausführung / special design:			0,51	0,5	25	
										730	650	0,62	0,44	0,1	16	40,5

[1] Höhere Temperaturen auf Anfrage / higher temperatures on request

[2] Maß gilt bis PN 40 gilt DIN 3202, andere auf Anfrage / measure only for PN 40 only DIN 3202, other on request

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Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 32

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [kg/h] / water at 68°F [kg/h]

Baugröße / Size	I	II		III		IV	
DN Eintr. / Inlet	15	20	25	32	40	50	65
d_o / mm	12,5	16	20	25	32	40	50
α_d, max	0,41	0,47	0,44	0,50	0,36	0,42	0,44
p_e / [bar(g)]							
0,05							
0,1	1144,5	2149,5	3144,3	5582,9	6585,8	12005,4	19651,8
0,2	1401,7	2632,6	3850,9	6837,6	8066,0	14703,6	24068,4
0,3	1618,6	3039,9	4446,7	7895,4	9313,8	16978,2	27791,8
0,4	1809,6	3398,7	4971,5	8827,3	10413,1	18982,3	31072,2
0,5	1982,3	3723,1	5446,1	9669,8	11407,0	20794,0	34037,8
1,0	2622,4	4925,2	7204,5	12792,0	15090,1	27507,9	45027,8
1,5	3211,7	6032,1	8823,6	15666,9	18481,5	33690,2	55147,6
2,0	3708,6	6965,3	10188,6	18090,6	21340,6	38902,1	63679,0
2,5	4146,3	7787,5	11391,2	20225,9	23859,5	43493,8	71195,2
3,0	4542,1	8530,7	12478,5	22156,4	26136,7	47645,1	77990,5
3,5	4906,0	9214,3	13478,3	23931,6	28230,9	51462,6	84239,3
4,0	5244,7	9850,5	14408,9	25584,0	30180,1	55015,8	90055,6
4,5	5562,9	10448,0	15283,0	27135,9	32010,8	58353,1	95518,4
5	5863,8	11013,1	16109,6	28603,8	33742,4	61509,5	100685,3
6	6423,4	12064,3	17647,2	31333,9	36962,9	67380,3	110295,2
7	6938,1	13030,9	19061,2	33844,4	39924,5	72779,1	119132,4
8	7417,2	13930,6	20377,3	36181,2	42681,1	77804,1	127357,9
9	7867,1	14775,7	21613,4	38376,0	45270,2	82523,7	135083,5
10	8292,6	15574,9	22782,5	40451,8	47718,9	86987,6	142390,5
12	9084,1	17061,5	24957,0	44312,8	52273,5	95290,2	155981,0
14	9812,0	18428,5	26956,6	47863,3	56461,8	102925,2	168478,7
16	10489,4	19700,9	28817,8	51168,0	60360,2	110031,6	180111,3
18	11125,7	20896,0	30565,9	54271,8	64021,7	116706,2	
20	11727,5	22026,3	32219,3	57207,5	67484,8	123019,1	
25	13111,8	24626,1	36022,3	63960,0	75450,3	137539,5	
30	14363,3	26976,6	39460,4	70064,6			
35	15514,1	29138,0	42622,1	75678,5			
40	16585,3	31149,9	45565,0	80903,7			

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves
Für Flüssigkeiten gilt die Bezeichnung: Normal-Sicherheitsventil /
for liquids applies the designation: Standart-Safety-Valve

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Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 32

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

Baugröße / Size	I		II		III		IV	
DN Eintr. / Inlet	15	15	20	25	32	40	50	65
d_o / mm	8	12,5	16	20	25	32	40	50
α_d, max	0,79	0,59	0,68	0,54	0,68	0,55	0,61	0,62
p_e / [bar(g)]								
0,05								
0,1		25,1	47,1	58,0	122,4	144,4	263,2	430,8
0,2		30,1	56,3	69,6	146,0	173,6	318,9	515,4
0,3		34,1	64,9	81,1	164,8	197,3	365,0	583,0
0,4		37,4	71,1	92,6	180,4	220,3	405,1	639,8
0,5		40,4	78,0	98,8	193,9	241,2	441,2	689,4
1,0		73,6	141,9	177,4	352,2	454,1	798,1	1270,2
1,5		87,3	166,9	206,9	426,8	540,3	960,2	1526,1
2,0		117,1	222,1	273,4	550,4	713,4	1240,9	1971,7
2,5		139,2	263,5	325,7	652,9	849,4	1474,7	2342,7
3,0		160,3	302,8	375,7	739,1	979,5	1697,4	2695,7
3,5		180,6	340,9	423,0	832,4	1103,0	1911,5	3035,7
4,0		199,7	377,1	467,9	920,7	1220,1	2114,3	3357,7
4,5		219,8	415,1	515,0	1013,4	1342,9	2327,2	3695,9
5		238,7	450,7	559,2	1100,3	1458,1	2526,8	4012,8
6		277,2	523,5	649,5	1278,0	1693,6	2935,0	4661,1
7		316,2	597,1	740,9	1457,7	1931,7	3347,6	5316,4
8		355,0	670,3	831,7	1636,5	2168,6	3758,1	5968,3
9	215,8	393,5	743,1	922,1	1814,3	2404,2	4166,4	6616,8
10	237,1	432,4	816,4	1013,0	1993,2	2641,4	4577,4	7269,5
12	279,5	509,6	962,4	1194,1	2349,5	3113,5	5395,6	8568,8
14	321,6	586,4	1107,4	1374,1	2703,6	3582,7	6208,7	9860,1
16	363,5	662,8	1251,5	1552,9	3055,4	4049,0	7016,7	11143,4
18	405,1	738,6	1394,8	1730,6	3405,2	4512,4	7819,8	
20	447,0	815,1	1539,1	1909,7	3757,5	4979,4	8629,0	
25	552,9	1008,1	1903,7	2362,1	4647,7	6159,1	10673,4	
30	658,4	1200,4	2266,8	2812,7	5534,2			
35	763,9	1392,9	2630,2	3263,6	6421,3			
40	869,2	1584,9	2992,8	3713,5	7306,6			
45	975,3							
50	1082,0							
60	1297,6							
70	1515,1							
80	1738,5							
90	1968,2							
100	2199,5							
110	2432,5							
120	2668,6							
130	2907,7							
140	3149,8							
150	3406,1							
175	4103,4							
200	4871,7							

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

1'06

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Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 32

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I		II		III		IV	
DN Eintr. / Inlet	15	15	20	25	32	40	50	65
d_o / mm	8	12,5	16	20	25	32	40	50
α_d, max	0,79	0,59	0,68	0,54	0,68	0,55	0,61	0,62
pe / [bar(g)]								
0,05								
0,1		31,6	59,4	73,1	154,3	182,0	331,7	543,0
0,2		39,5	74,0	91,6	192,1	228,3	419,3	677,8
0,3		46,6	88,8	110,9	225,3	269,8	499,2	797,3
0,4		53,1	100,9	131,3	255,9	312,5	574,8	907,8
0,5		59,3	114,5	145,1	284,7	354,1	647,8	1012,2
1,0		87,9	169,5	211,9	420,7	542,4	953,4	1517,3
1,5		116,8	223,3	276,9	571,1	723,1	1284,9	2042,2
2,0		148,4	281,4	346,5	697,5	904,0	1572,4	2498,5
2,5		176,4	333,9	412,7	827,4	1076,6	1869,0	2969,0
3,0		205,4	387,9	481,3	947,0	1254,9	2174,7	3453,7
3,5		231,4	436,9	542,1	1066,6	1413,4	2449,4	3889,9
4,0		257,3	485,9	602,9	1186,2	1571,9	2724,1	4326,2
4,5		283,3	534,9	663,7	1305,9	1730,5	2998,9	4762,6
5		309,2	583,9	724,5	1425,6	1889,1	3273,8	5199,2
6		361,2	682,0	846,3	1665,1	2206,5	3823,8	6072,7
7		413,2	780,2	968,1	1904,8	2524,1	4374,2	6946,8
8		465,2	878,4	1090,0	2144,6	2841,9	4925,0	7821,4
9	283,7	517,2	976,7	1211,9	2384,5	3159,9	5476,0	8696,6
10	312,2	569,3	1075,1	1333,9	2624,7	3478,1	6027,5	9572,3
12	369,4	673,6	1272,0	1578,2	3105,3	4115,1	7131,3	11325,3
14	426,7	778,0	1469,1	1822,9	3586,6	4752,9	8236,6	13080,6
16	484,0	882,5	1666,5	2067,8	4068,5	5391,5	9343,2	14838,1
18	541,4	987,2	1864,1	2313,0	4551,0	6030,9	10451,2	
20	598,9	1092,0	2062,0	2558,5	5034,1	6671,1	11560,6	
25	742,9	1354,5	2557,8	3173,7	6244,5	8275,1	14340,3	
30	887,3	1617,9	3055,1	3790,8	7458,7			
35	1032,2	1882,1	3554,0	4409,9	8676,8			
40	1177,6	2147,2	4054,6	5030,9	9898,8			
45	1323,5							
50	1469,8							
60	1763,8							
70	2059,7							
80	2357,6							
90	2657,5							
100	2959,4							
110	3263,3							
120	3569,2							
130	3877,3							
140	4187,5							
150	4499,8							
175	5290,4							
200	6095,2							

Tabelle nur für bauteilgeprüfte Ventile / list only for TÜV-approved valves

1'06

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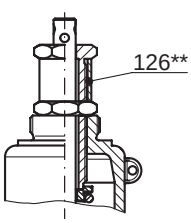
Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

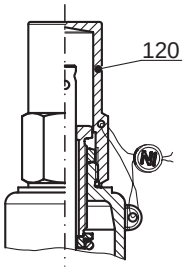
Typ 32

Typ 32.1: Wst. / Material 1.0460 / 0.7043
Typ 32.2: Wst. / Material 1.4571 / 1.4581
Typ 32.7: Wst. / Material 1.4571 / 1.4308

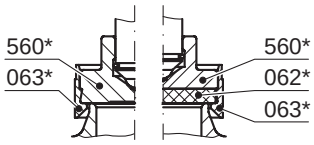
DN 15/25



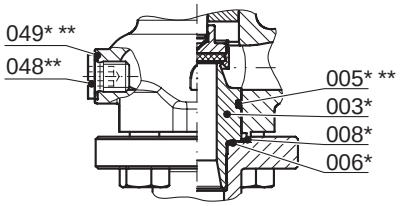
lock sleeve
on request



head C
gastight cap

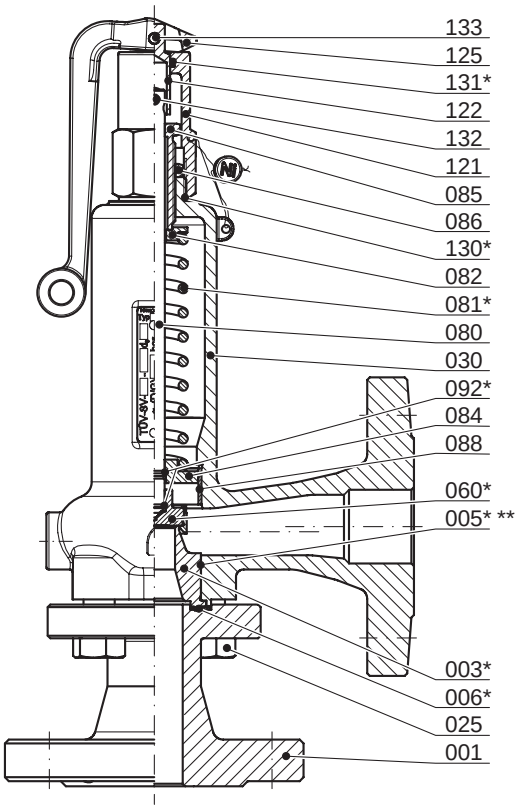


disc complete, pos. 060*
metal seated soft seated



drainage screw
on reques

screw seat from PN 40



head A
gastight with lifting lever

Item	Description	Material 32.1	32.2	32.7
001	1 inlet body	1.0460	1.4571	1.4571
003*	1 seat	1.4104	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
008*	1 packing ring	TESNIT BAU		PTFE
025	4 screw	A2	A2	A2
030	1 spring bonnet	0.7043	1.4581	1.4308
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
080	1 spindel	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4571
084	1 springplate, lower	1.4571	1.4571	1.4571
085	1 adjusting screw	1.4305	1.4305	1.4571
086	1 lock nut	1.0718	1.4305	1.4571
088 [2]	1 guide bush	1.4571		

Item	Description	Material 32.1	32.2	32.7
092*	2 lock ring	1.4571	1.4571	1.4571
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581 [3]	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
133	1 groove pin	A4	A4	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 Dichtring	Cu	PTFE	PTFE
126**	1 packing ring	1.4305	1.4305	

* expendable parts

** optional design, on request

[2] only in type 32.1

[3] on request: 1.4581

engl 02'07

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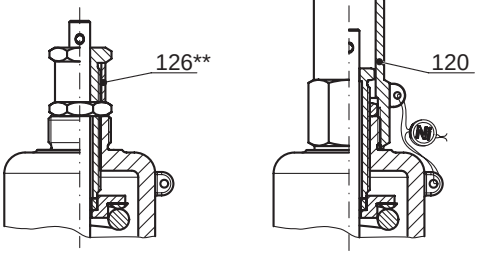
Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

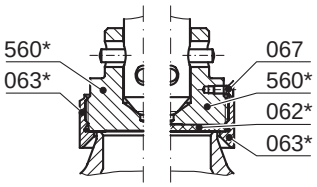
Typ 32

Typ 32.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 20/32
Typ 32.2 :	Wst. / Material	1.4571 / 1.4581	DN 25/40
Typ 32.7 :	Wst. / Material	1.4571 / 1.4308	

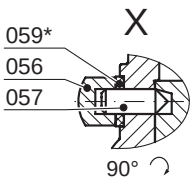


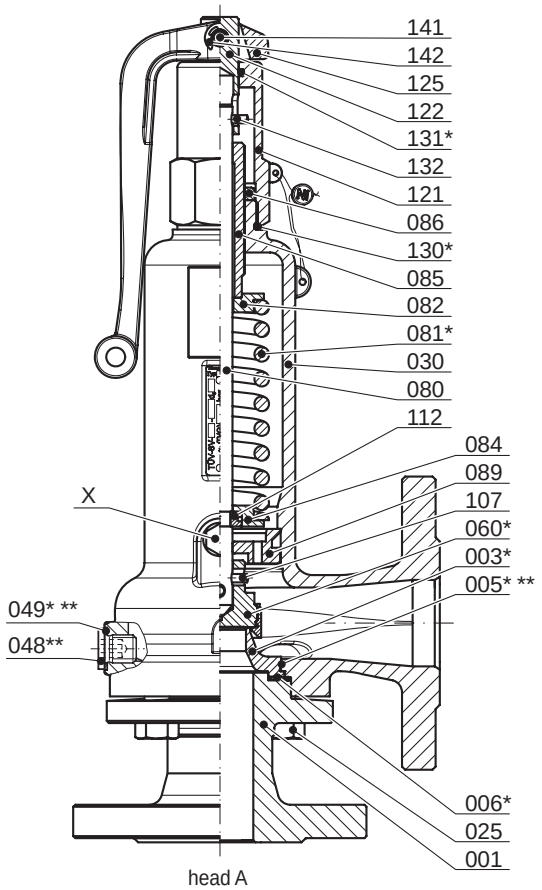
lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 32.1	32.2	32.7	Item	Description	Material 32.1	32.2	32.7
001	1 inlet body	1.0460[1)]	1.4571	1.4571	107	1 spring pin	A2	A2	A2
003*	1 seat	1.4571	1.4571	1.4571	112	1 split ring	1.4305	1.4305	1.4305
006*	1 packing ring	TESNIT BAU		PTFE	120	1 cap (only head C)	1.0718	1.4581	1.4571
025	4 screw	A2	A2	A2	121	1 lifting cap (only head A)	1.4104	1.4581	
030	1 spring bonnet	1.0619	1.4581	1.4308	122	1 coupling	1.4305	1.4305	
056	2 lock nut	A4	A4	A4	125	1 lifting lever	3.2581	3.2581	
057	2 screwed pin	A2	A2	A2	130*	1 o-ring	NBR	FPM	EPDM
059*	2 packing ring	PTFE	PTFE	PTFE	131*	1 o-ring	NBR	FPM	
060*	1 disc, complete				132	1 groove pin	A4	A4	
560*	1 disc	1.4571	1.4571	1.4571	141	1 bolt	1.4305	1.4305	
062*	1 soft sealing	see techn. appendic: KWD-1			142	2 stop washer	A2	A2	
063*	1 disc ring	1.4571	1.4571	1.4571					
067	1 security screw	A2	A2	A2		on request			
080	1 spindle	1.4104	1.4571	1.4571					
081*	1 spring	1.4310	1.4310	1.4310	005* **	1 o-ring	NBR	FPM	EPDM
082	1 springplate, upper	1.4305	1.4305	1.4305	048**	1 drainage screw	A4	A4	A4
084	1 springplate, lower	1.0718	1.4305	1.4305	049* **	1 packing ring	Cu	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	1.4305	126**	1 lock sleeve	1.4305	1.4305	
086	1 lock nut	1.4305	1.4305	1.4305					
089	1 guide plate	1.4571	1.4571	1.4571					

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* expendable parts
** optional design, on request

[1)] alternative: 1.0619

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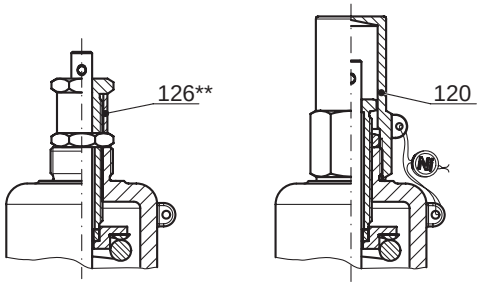
Vollhub-Sicherheitsventil, federbelastet
Full-lift-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 32

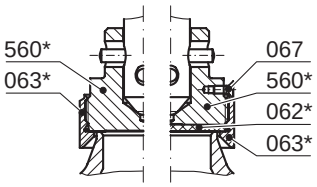
Typ 32.1 : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 32.2 : Wst. / Material 1.4571 / 1.4581
Typ 32.7 : Wst. / Material 1.4571 / 1.4308

DN 32/50
DN 40/65

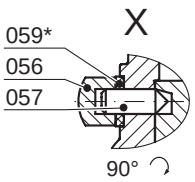


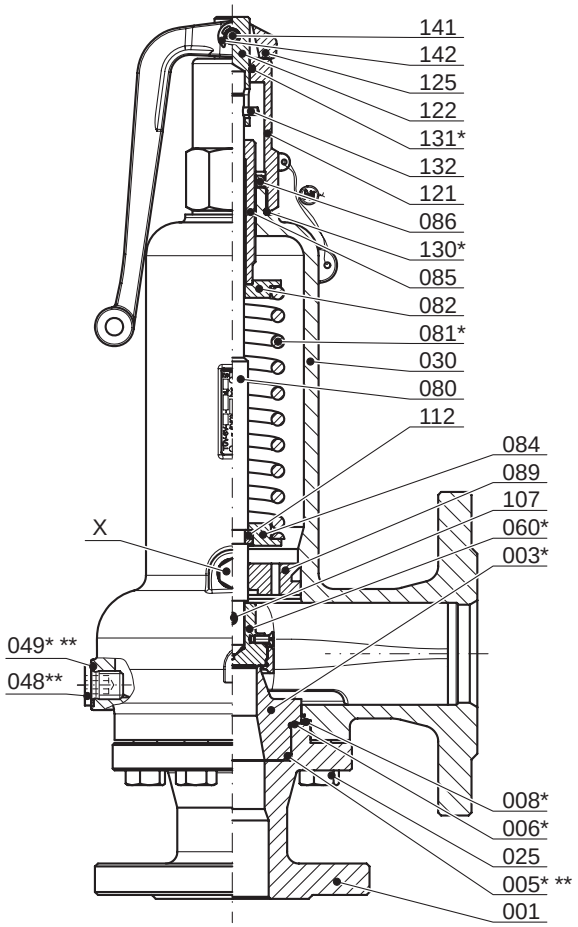
lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 32.1	32.2	32.7	Item	Description	Material 32.1	32.2	32.7
001	1 inlet body	1.0460 [1)]	1.4571	1.4571	089	1 guide plate	1.4571	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571	107	1 spring pin	A2	A2	A2
006*	1 packing ring	TESNIT BAU		PTFE	112	1 split ring	1.4305	1.4305	1.4305
008*	1 packing ring	TESNIT BAU		PTFE	120	1 cap (only head C)	1.0718	1.4581	1.4571
025	8 screw	A2	A2	A2	121	1 lifting cap (only head A)	1.4104	1.4581	
030	1 spring bonnet	1.0619	1.4581	1.4308	122	1 coupling	1.4305	1.4305	
056	2 lock nut	A4	A4	A4	125	1 lifting lever	3.2581	3.2581	
057	2 screwed pin	A2	A2	A2	130*	1 o-ring	NBR	FPM	EPDM
059*	2 packing ring	PTFE	PTFE	PTFE	131*	1 o-ring	NBR	FPM	
060*	1 disc, complete				132	1 groove pin	A4	A4	
560*	1 disc	1.4571	1.4571	1.4571	141	1 bolt	1.4305	1.4305	
062*	1 soft sealing	see techn. appendic: KWD-1			142	2 stop washer	A2	A2	
063*	1 disc ring	1.4571	1.4571	1.4571					
067	1 security screw	A2	A2	A2		on request			
080	1 spindle	1.4104	1.4571	1.4571					
081*	1 spring	1.4310	1.4310	1.4310	005* **	1 o-ring	NBR	FPM	EPDM
082	1 springplate, upper	1.0718	1.4305	1.4305	048**	1 drainage screw	A4	A4	A4
084	1 springplate, lower	1.0718	1.4305	1.4305	049* **	1 packing ring	Cu	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	1.4305	126**	1 lock sleeve	1.4305	1.4305	
086	1 lock nut	1.4305	1.4305	1.4305					

_engl 02'07

* expendable parts
** optional design, on request

[1)] alternative: 1.0619

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Full-lift-Safety-Valve, springloaded

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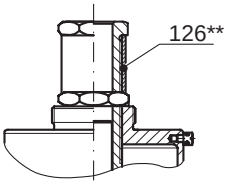
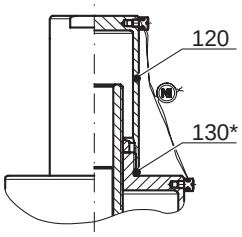
Typ 32

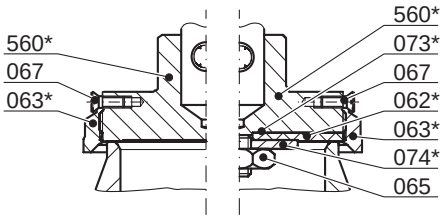
Typ 32.1 :	Wst. / Material	1.0619 / 1.0619
Typ 32.2 :	Wst. / Material	1.4581 / 1.4581
Typ 32.7 :	Wst. / Material	1.4571 / 1.4308



lock sleeve
on request

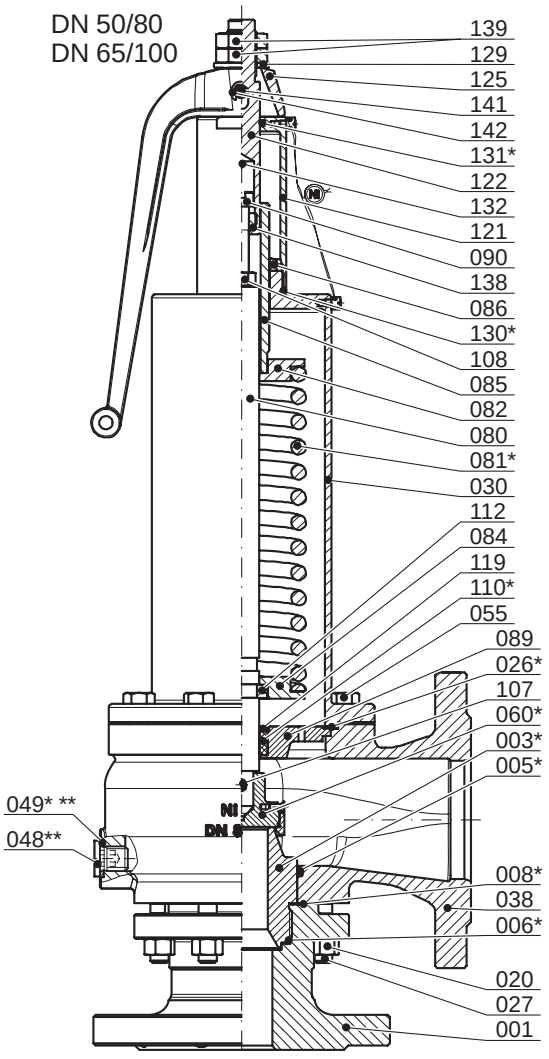


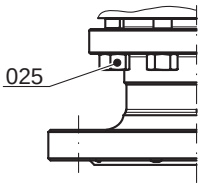
head C
gastight cap



disc complete, pos. 060*
metal seated soft seated

DN 50/80
DN 65/100





DN 80

head A
gastight with lifting lever

Item	Description	Material 32.1	32.2	32.7
001	1 inlet body	1.0619	1.4581	1.4571
003*	1 seat	1.4571	1.4571	1.4571
005*	1 o-ring	NBR	FPM	EPDM
006*	1 packing ring	PTFE	PTFE	PTFE
008*	1 packing ring	TESNIT BAU		PTFE
020	8 nut	A2	A2	A2
025	8 screw	A2	A2	A2
026*	1 packing ring	TESNIT BAU		PTFE
027	8 stud bolt	A2	A2	A2
030	1 spring bonnet	1.0254	1.4571	1.4571
038	1 outlet body	1.0619	1.4581	1.4308
055	8 screw	A2	A2	A2
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
065	1 disc bolt	A4	A4	A4
067	1 security screw	A2	A2	A2
073*	1 o-ring	NBR	FPM	PTFE
074*	1 disc plate	1.4571	1.4571	1.4571
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305

Item	Description	Material 32.1	32.2	32.7
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.0460	1.4571	1.4571
090	1 screw	A2	A2	A2
107	1 spring pin	A2	A2	A2
108	1 nut	A2	A2	A2
110*	1 bush	PTFE-Gr.	PTFE-Gr.	PTFE-Gr.
112	1 split ring	1.4305	1.4305	1.4305
119	1 locking ring	A2	A2	A2
120	1 cap (only head C)	1.0254	1.4571	1.4571
121	1 lifting cap	1.0254	1.4571	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
129	1 pressure plate	A2	A2	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
138	1 screw	1.4305	1.4305	
139	2 nut	A2	A2	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

* expendable parts

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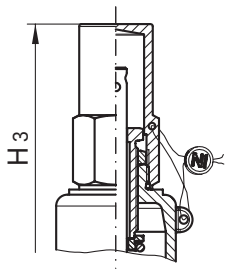
Entlastungsventil, federbelastet
Relief-Valve, springloaded

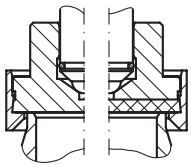
für Dämpfe und Gase mit geschlossener Haube
for steam and gases in closed completion

Typ 33

Typ 33.1 : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 33.2 : Wst. / Material 1.4571, 1.4581 / 1.4581
Typ 33.7 : Wst. / Material 1.4571 / 1.4308

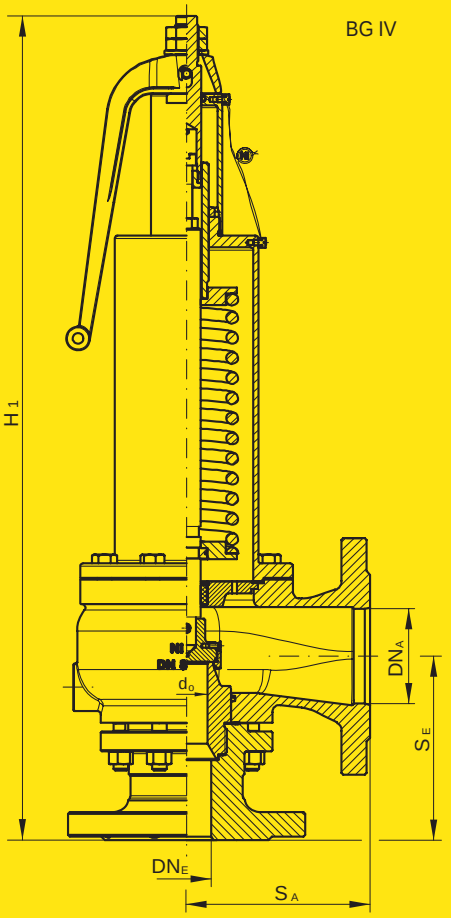


Kopf C / head C
gasdichte Kappe
gastight cap



metallisch dichtend
metal seated

weich dichtend
soft seated



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 33.1 BG II - IV : -10°C bis / to 350°C
Typ 33.2 BG II - IV : -60°C bis / to 350°C (400°C[1])
Typ 33.7 BG II - IV : -200°C bis / to 280°C (300°C[1])

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions		Ausflussziffer Coefficient		Ansprechdruck Set pressure		Gewicht Weight
	DN E / NPS		PN E / [bar]	do	SE[2]	DN A / NPS		PN A / [bar]	SA[2]	H1	H3	αd max	αd	p min	p max	
	[mm]		class	[mm]	[mm]	[mm]		class	[mm]	[mm]	[mm]			[bar(g)]	[bar(g)]	[kg]
II	15 20 20	1/2 3/4 3/4	16-63 150-600	12,5 16 20	105 115 115	32 40 40	1¼ 1½ 1½	16-40 150-300	105 115 115	395 405	375 385		0,3	4,0 0,2 0,3	120 40 40	9,6 10,0
III	25 32	1 1¼	16-63 150-600	20 25	125 145	50 65	2 2½	16-40 150-300	125 145	450 470	430 450		0,5 0,15	0,2 0,2	40 40	15,0 19,3
IV	40 50	1½ 2	16-63 150-600	32 40	155 175	80 100	3 4	16-40 150	155 175	700 730	620 650		0,5 0,3	0,2 0,2	40 40	36,8 40,5

[1] Höhere Temperaturen auf Anfrage / higher temperatures on request

[2] Maß gilt bis PN 40 gilt DIN 3202, andere auf Anfrage /
measure only for PN 40 only DIN 3202, other on request

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Entlastungsventil, federbelastet
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for steam and gases in closed completion

Typ 33

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

Baugröße / Size	II		III		IV	
DN Eintr. / Inlet	15	20	25	32	40	50
d_o / mm	12,5	16	20	25	32	40
α_d, max	0,50	0,75	0,74	0,79	0,67	0,64
p_e / [bar(g)]						
0,4	35	85	130	202	302	453
0,5	39	95	146	226	339	508
0,6	43	104	160	248	371	557
0,7	46	112	173	268	402	602
0,8	50	120	185	287	431	646
0,9	53	129	198	307	460	690
1,0	57	137	211	328	490	735
1,5	74	180	277	435	645	966
2,0	93	225	347	553	807	1210
2,5	111	272	419	681	973	1450
3,0	130	319	491	820	1140	1700
3,5	145	357	551	919	1270	1900
4,0	161	396	610	1020	1410	2110
4,5	176	434	669	1110	1550	2310
5	192	472	728	1210	1690	2520
6	223	548	845	1410	1960	2920
7	254	624	962	1600	2230	3330
8	285	700	1080	1800	2500	3730
9	315	775	1190	1990	2770	4130
10	346	851	1310	2190	3040	4540
12	407	1000	1540	2570	3580	5340
14	469	1150	1770	2960	4110	6140
16	530	1300	2010	3350	4650	6950
18	591	1450	2240	3730	5190	7750
20	652	1600	2470	4120	5730	8550
25	805	1980	3050	5090	7070	10500
30	959	2350	3630	6060	8420	12500
35	1110	2730	4210	7030	9770	14600
40	1270	3110	4800	8010	11100	16600

1'06

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Relief-Valve, springloaded

für Dämpfe und Gase mit geschlossener Haube
for steam and gases in closed completion

Typ 33

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	II		III		IV	
DN Eintr. / Inlet	15	20	25	32	40	50
d_o / mm	12,5	16	20	25	32	40
α_d, max	0,50	0,75	0,74	0,79	0,67	0,64
p_e / [bar(g)]						
0,1						
0,2	29	71	108	169	252	378
0,3	36	89	135	209	313	469
0,4	42	103	158	245	366	549
0,5	48	116	178	277	415	622
1,0	72	174	267	415	621	931
1,5	95	230	354	555	823	1230
2,0	119	289	445	709	1030	1550
2,5	144	350	540	878	1250	1870
3,0	168	413	636	1060	1470	2200
3,5	189	464	716	1190	1660	2470
4,0	210	516	795	1320	1840	2750
4,5	231	567	874	1460	2030	3020
5	252	619	954	1590	2210	3300
6	294	722	1110	1850	2580	3850
7	336	825	1270	2120	2950	4400
8	378	928	1430	2390	3310	4950
9	420	1030	1590	2650	3680	5500
10	462	1130	1750	2920	4050	6050
12	546	1340	2070	3450	4790	7150
14	630	1550	2390	3980	5530	8260
16	714	1750	2700	4510	6270	9360
18	799	1960	3020	5050	7010	10400
20	883	2170	3340	5580	7750	11600
25	1090	2690	4140	6910	9610	14300
30	1300	3210	4950	8250	11500	17100
35	1520	3730	5750	9590	13300	19900
40	1730	4250	6550	10900	15200	22700

1'06

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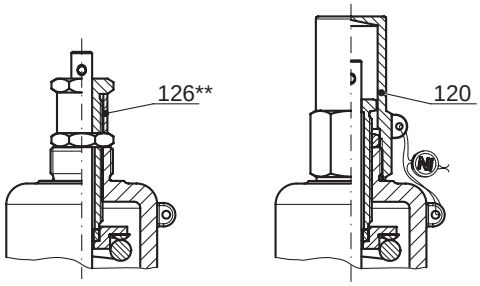
for steam and gases in closed completion

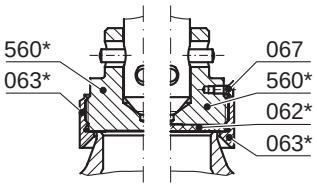
Typ 33

Typ 33.1 :	Wst. / Material	1.0460, 1.0619 / 1.0619	DN 15/32
Typ 33.2 :	Wst. / Material	1.4571 / 1.4581	DN 20/40
Typ 33.7 :	Wst. / Material	1.4571 / 1.4308	

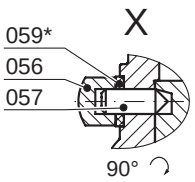


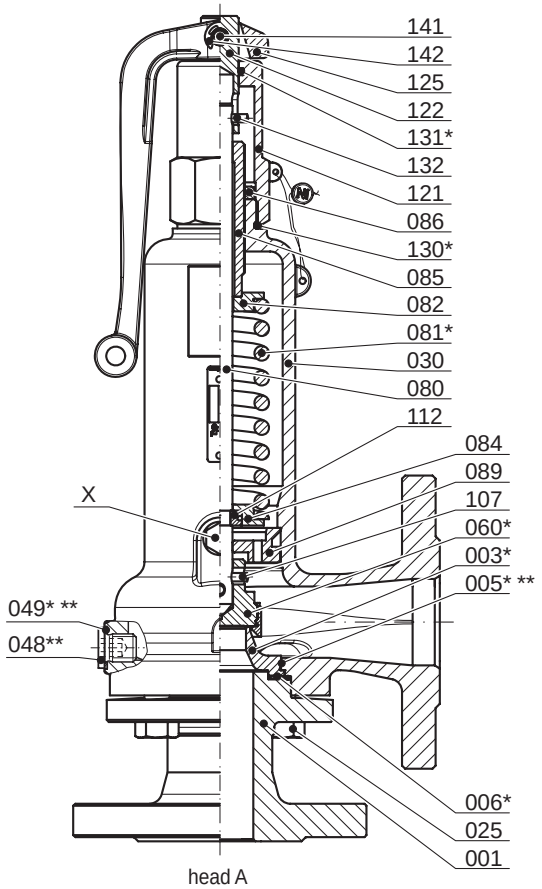
lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 33.1	33.2	33.7	Item	Description	Material 33.1	33.2	33.7
001	1 inlet body	1.0460	1.4571	1.4571	107	1 spring pin	A2	A2	A2
003*	1 seat	1.4571 [2]	1.4571	1.4571	112	1 split ring	1.4305	1.4305	1.4305
006*	1 packing ring	TESNIT BAU		PTFE	120	1 cap (only head C)	1.0718	1.4581	1.4571
025	4 screw	A4	A4	A4	121	1 lifting cap (only head A)	1.4104	1.4581	
030	1 spring bonnet	1.0619	1.4581	1.4308	122	1 coupling	1.4305	1.4305	
056	2 lock nut	A2	A2	A2	125	1 lifting lever	3.2581	3.2581	
057	2 screwed pin	A2	A2	A2	130*	1 o-ring	NBR	FPM	EPDM
059*	2 packing ring	PTFE	PTFE	PTFE	131*	1 o-ring	NBR	FPM	
060*	1 disc, complete				132	1 groove pin	A4	A4	
560*	1 disc	1.4571	1.4571	1.4571	141	1 bolt	1.4305	1.4305	
062*	1 soft sealing	see techn. appendic: KWD-1			142	2 stop washer	A2	A2	
063*	1 disc ring	1.4571	1.4571	1.4571					
067	1 security screw	A2	A2	A2		on request			
080	1 spindle	1.4104	1.4571	1.4571					
081*	1 spring	1.4310	1.4310	1.4310	005* **	1 o-ring	NBR	FPM	EPDM
082	1 springplate, upper	1.4305	1.4305	1.4305	048**	1 drainage screw	A4	A4	A4
084	1 springplate, lower	1.0718	1.4305	1.4305	049* **	1 packing ring	Cu	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	1.4305	126**	1 lock sleeve	1.4305	1.4305	
086	1 lock nut	1.4305	1.4305	1.4305					
089	1 guide plate	1.4571	1.4571	1.4571					

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* expendable parts
** optional design, on request

[1] alternative 1.0619
[2] do 12,5 1.4104

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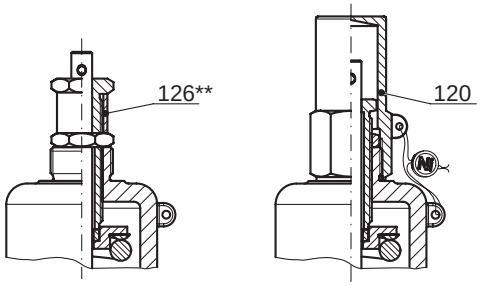
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe und Gase mit geschlossener Haube
for steam and gases in closed completion

Typ 33

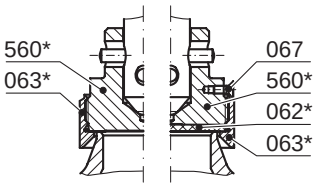
Typ 33.1 : Wst. / Material 1.0460, 1.0619 / 1.0619
Typ 33.2 : Wst. / Material 1.4571 / 1.4581
Typ 33.7 : Wst. / Material 1.4571 / 1.4308

DN 25/50
DN 32/65

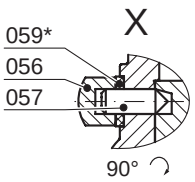


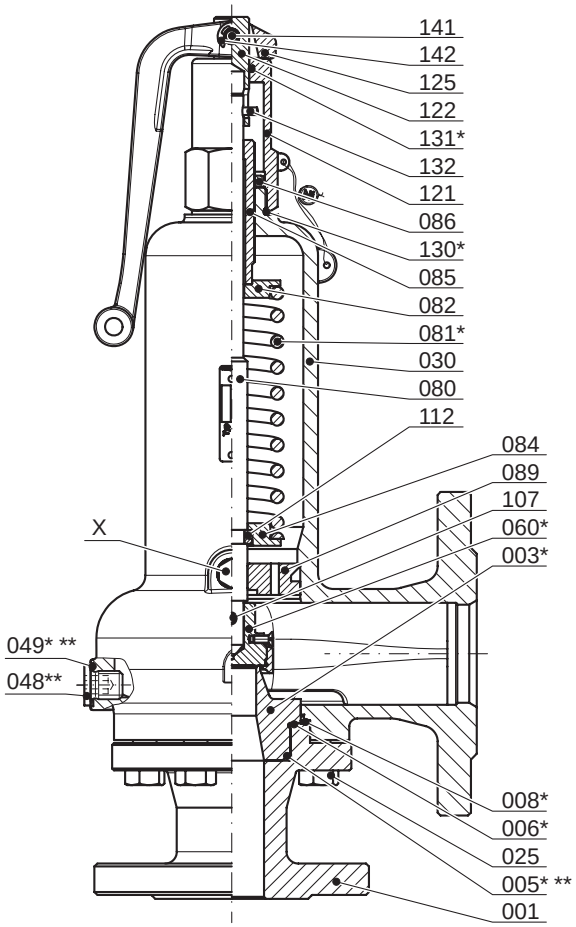
lock sleeve
on request

head C
gastight cap



disc complete, pos. 060*
metal seated soft seated





head A
gastight with lifting lever

Item	Description	Material 33.1	33.2	33.7
001	1 inlet body	1.0460 [1)]	1.4571	1.4571
003*	1 seat	1.4571	1.4571	1.4571
006*	1 packing ring	TESNIT BAU		PTFE
008*	1 packing ring	TESNIT BAU		PTFE
025	8 screw	A2	A2	A2
030	1 spring bonnet	1.0619	1.4581	1.4308
056	2 lock nut	A4	A4	A4
057	2 screwed pin	A2	A2	A2
059*	2 packing ring	PTFE	PTFE	PTFE
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
067	1 security screw	A2	A2	A2
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.4305	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	1.4305

Item	Description	Material 33.1	33.2	33.7
089	1 guide plate	1.4571	1.4571	1.4571
107	1 spring pin	A2	A2	A2
112	1 split ring	1.4305	1.4305	1.4305
120	1 cap (only head C)	1.0718	1.4581	1.4571
121	1 lifting cap (only head A)	1.4104	1.4581	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
005* **	1 o-ring	NBR	FPM	EPDM
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

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* expendable parts
** optional design, on request

[1)] DN 32 alternative 1.0619

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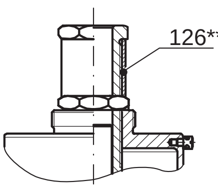
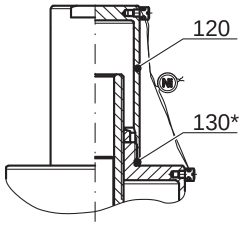
for steam and gases in closed completion

Typ 33

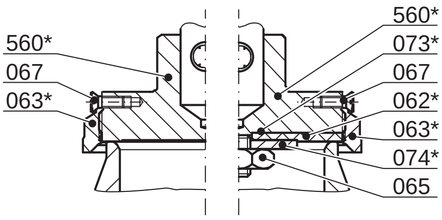
Typ 33.1 : Wst. / Material 1.0619 / 1.0619
Typ 33.2 : Wst. / Material 1.4581 / 1.4581
Typ 33.7 : Wst. / Material 1.4571 / 1.4308



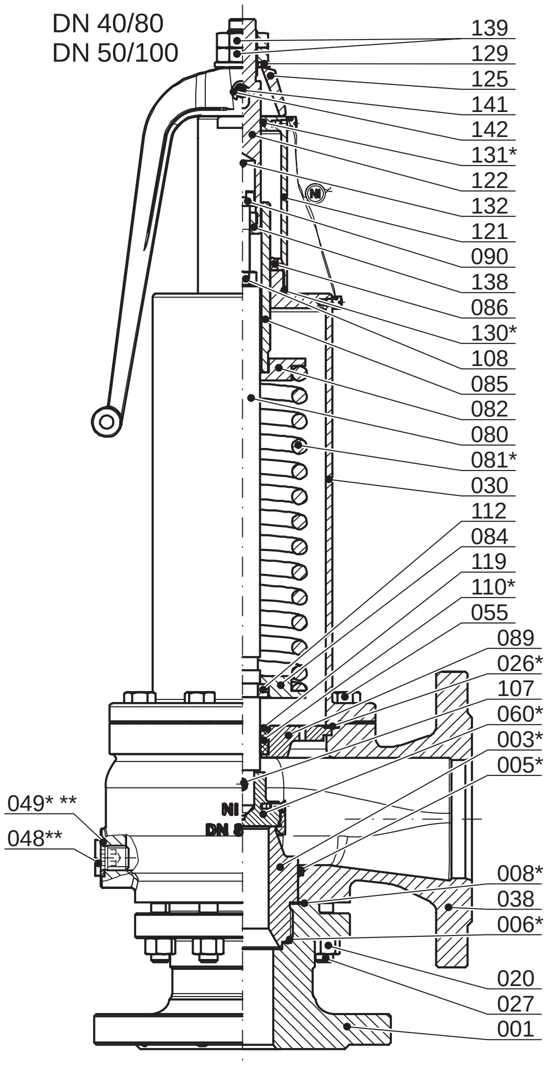
lock sleeve
on request



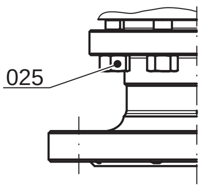
head C
gastight cap



disc complete, pos. 060*
metal seated soft seated



head A
gastight with lifting lever



DN 80

Item	Description	Material 33.1	33.2	33.7
001	1 inlet body	1.0619	1.4581	1.4571
003*	1 seat	1.4571	1.4571	1.4571
005*	1 o-ring	NBR	FPM	EPDM
006*	1 packing ring	TESNIT BAU		PTFE
008*	1 packing ring	TESNIT BAU		PTFE
020	8 nut	A2	A2	A2
025	8 screw	A2	A2	A2
026*	1 packing ring	TESNIT BAU		PTFE
027	8 stud bolt	A2	A2	A2
030	1 spring bonnet	1.0254	1.4571	1.4571
038	1 outlet body	1.0619	1.4581	1.4308
055	8 screw	A2	A2	A2
060*	1 disc, complete			
560*	1 disc	1.4571	1.4571	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1		
063*	1 disc ring	1.4571	1.4571	1.4571
065	1 disc bolt	A4	A4	A4
067	1 security screw	A2	A2	A2
073*	1 o-ring	NBR	FPM	PTFE
074*	1 disc plate	1.4571	1.4571	1.4571
080	1 spindle	1.4104	1.4571	1.4571
081*	1 spring	1.4310	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305	1.4305
084	1 springplate, lower	1.0718	1.4305	1.4305
085	1 adjusting screw	1.4305	1.4305	1.4305

Item	Description	Material 33.1	33.2	33.7
086	1 lock nut	1.4305	1.4305	1.4305
089	1 guide plate	1.0460	1.4571	1.4571
090	1 screw	A2	A2	A2
107	1 spring pin	A2	A2	A2
108	1 nut	A2	A2	A2
110*	1 bush	PTFE-Gr.	PTFE-Gr.	PTFE-Gr.
112	1 split ring	1.4305	1.4305	1.4305
119	1 locking ring	A2	A2	A2
120	1 cap (only head C)	1.0254	1.4571	1.4571
121	1 lifting cap	1.0254	1.4571	
122	1 coupling	1.4305	1.4305	
125	1 lifting lever	3.2581	3.2581	
129	1 pressure plate	A2	A2	
130*	1 o-ring	NBR	FPM	EPDM
131*	1 o-ring	NBR	FPM	
132	1 groove pin	A4	A4	
138	1 screw	1.4305	1.4305	
139	2 nut	A2	A2	
141	1 bolt	1.4305	1.4305	
142	2 stop washer	A2	A2	
	on request			
048**	1 drainage screw	A4	A4	A4
049* **	1 packing ring	Cu	PTFE	PTFE
126**	1 lock sleeve	1.4305	1.4305	

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* expendable parts

Robinex AG
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Sicherheits- / Entlastungsventile, für Lebensmittel - Pharmazie

Safety- / Relief-Valves, Food - pharmacy

Inhaltsverzeichnis
Index

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

* Bauteilgeprüft / TÜV-Approval..... - B -

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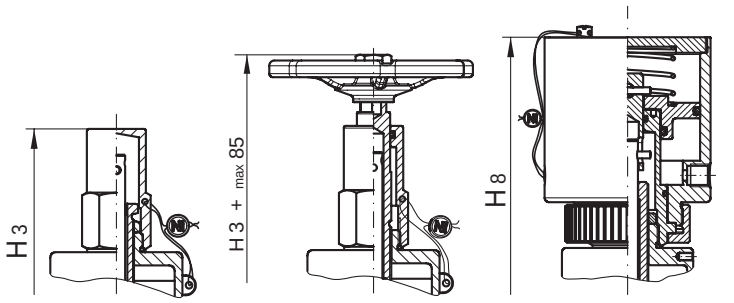
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

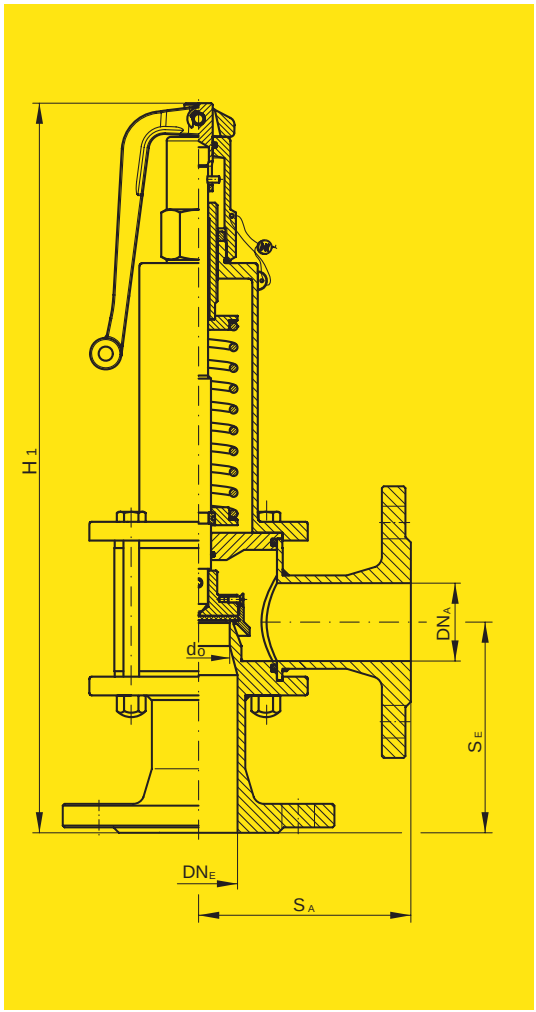
Typ 35.2 : Wst. / Material 1.4571



Kopf C / head C
gasdichte Kappe
gastight cap

Kopf F / head F
gasdicht mit Handrad
gastight with lifting design

Kopf H / head H
pneumatische Anlüftung
pneumatic lifting design



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 35.2 : -50°C bis / to 100°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions			Ansprechdruck Set pressure		Gewicht Weight
	DN* E / NPS		PN E / [bar]	do	S E	DN* A / NPS		PN A / [bar]	S A	H1	H3	H8	p min	p max	
	[mm]		ANSI lbs/sqi	[mm]	[mm]	[mm]		ANSI lbs/sqi	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	15 20 25	1/2 3/4 1	16-40 150-300	12,5 12,5 16,0	90 95 100	15 20 25	1/2 3/4 1	16/40 150-300	90 95 100	320 325 330	305 310 315	355 360 365	0,4	16	
II	32 40	1¼ 1½	16-40 150-300	20 25	105 115	32 40	1¼ 1½	16/40 150-300	105 115	405 415	385 395	425 435	0,4 0,2	16	
III	50 65	2 2½	16-40 150-300	32 40	125 145	50 65	2 2½	16/40 150-300	125 145	465 485	445 465	485 505	0,2	16	
IV	80	3	16-40 150-300	50	155	80	3	16/40 150-300	155	700	620	-	0,2	16	

* DIN 11851, DIN 32676, Clamp, Aseptik-Anschlüsse usw. auf Anfrage / on request

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

Massenstromtabelle / Discharge capacities

Wasser bei 20°C [kg/h] / water at 68°F [kg/h]

BG / Size	I	II		III		IV
DN Eintr. / Inlet	25	32	40	50	65	80
d_O / mm	16	20	25	32	40	50
α_d, max	0,10	0,10	0,10	0,10	0,10	0,10
p_e / [bar(g)]						
0,1						
0,2			1110	1830	2860	4460
0,3			1370	2240	3500	5470
0,4	647	1010	1580	2590	4040	6310
0,5	723	1130	1760	2890	4520	7060
1,0	1020	1600	2490	4090	6390	9980
1,5	1250	1950	3060	5010	7830	12200
2,0	1440	2260	3530	5780	9040	14100
2,5	1610	2520	3950	6470	10100	15800
3,0	1770	2770	4320	7080	11100	17300
3,5	1910	2990	4670	7650	11900	18700
4,0	2040	3190	4990	8180	12800	20000
4,5	2170	3390	5290	8680	13500	21200
5	2280	3570	5580	9140	14300	22300
6	2500	3910	6110	10000	15600	24400
7	2700	4230	6600	10800	16900	26400
8	2890	4520	7060	11500	18100	28200
9	3070	4790	7490	12300	19200	29900
10	3230	5050	7890	12900	20200	31600
12	3540	5530	8650	14100	22100	34600
14	3820	5980	9340	15300	23900	37300
16	4090	6390	9980	16300	25500	39900

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

Massenstromtabelle / Discharge capacities

Sattdampf [kg/h] / saturated steam [kg/h]

BG / Size	I	II		III		IV
DN Eintr. / Inlet	25	32	40	50	65	80
d_O / mm	16	20	25	32	40	50
α_d, max	0,15	0,15	0,15	0,15	0,15	0,15
p_e / [bar(g)]						
0,4	17,7	27,6	43,2	70,7	110,0	173,0
0,5	19,9	31,0	48,5	79,5	124,0	194,0
0,6	21,8	34,1	53,3	87,4	136,0	213,0
0,7	23,7	37,0	57,8	94,8	148,0	231,0
0,8	25,4	39,7	62,1	102,0	159,0	248,0
0,9	27,2	42,5	66,4	109,0	170,0	266,0
1,0	29,0	45,3	70,8	116,0	181,0	283,0
1,5	38,1	59,5	93,0	152,0	238,0	372,0
2,0	47,1	73,7	115,0	188,0	295,0	460,0
2,5	55,8	87,2	136,0	223,0	349,0	545,0
3,0	63,8	99,6	156,0	255,0	398,0	623,0
3,5	71,5	111,0	174,0	286,0	446,0	698,0
4,0	79,1	123,0	193,0	316,0	494,0	773,0
4,5	86,7	135,0	212,0	347,0	542,0	847,0
5,0	94,4	147,0	230,0	378,0	590,0	922,0
6,0	109,0	171,0	268,0	439,0	685,0	1070,0
7,0	125,0	195,0	305,0	499,0	780,0	1220,0
8,0	140,0	219,0	342,0	560,0	875,0	1370,0
9,0	155,0	242,0	379,0	620,0	969,0	1510,0
10,0	170,0	266,0	415,0	681,0	1060,0	1660,0
12,0	200,0	313,0	489,0	801,0	1250,0	1950,0
14,0	230,0	360,0	562,0	922,0	1440,0	2250,0
16,0	260,0	470,0	636,0	1040,0	1630,0	2540,0

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

Volumenstromtabelle / Discharge capacities

Luft bei 0°C und 1013 mbar [m^3_n/h] / air at 32°F and 1013 mbar [m^3_n/h]

BG / Size	I	II		III		IV
DN Eintr. / Inlet	25	32	40	50	65	80
d_O / mm	16	20	25	32	40	50
α_d, max	0,15	0,15	0,15	0,15	0,15	0,15
p_e / [bar(g)]						
0,1						
0,2			35,6	58,4	91,3	142,0
0,3			44,5	72,9	114,0	178,0
0,4	21,4	33,4	52,3	85,7	134,0	209,0
0,5	24,3	38,0	59,4	97,3	152,0	237,0
1,0	36,8	57,4	89,8	147,0	230,0	359,0
1,5	48,6	75,9	118,0	194,0	304,0	475,0
2,0	60,5	94,5	148,0	242,0	378,0	591,0
2,5	71,9	112,0	176,0	288,0	450,0	703,0
3,0	82,5	129,0	201,0	330,0	516,0	806,0
3,5	92,8	145,0	226,0	371,0	580,0	907,0
4,0	103,0	161,0	252,0	412,0	644,0	1010,0
4,5	113,0	177,0	277,0	454,0	709,0	1110,0
5	124,0	193,0	302,0	495,0	773,0	1210,0
6	144,0	225,0	352,0	577,0	902,0	1410,0
7	165,0	258,0	403,0	660,0	1030,0	1610,0
8	185,0	290,0	453,0	742,0	1160,0	1810,0
9	206,0	322,0	503,0	825,0	1290,0	2010,0
10	227,0	354,0	554,0	908,0	1420,0	2210,0
12	268,0	419,0	655,0	1070,0	1670,0	2620,0
14	309,0	484,0	756,0	1240,0	1930,0	3020,0
16	351,0	548,0	857,0	1400,0	2190,0	3430,0

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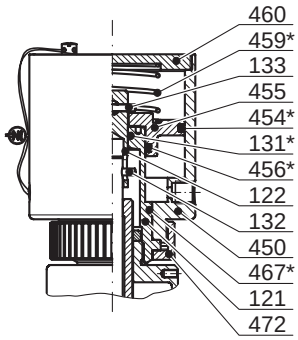
Entlastungsventil, federbelastet
Relief-Valve, springloaded

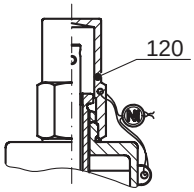
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

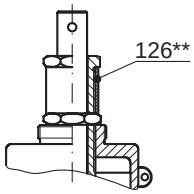
Typ 35.2 : Wst. / Material 1.4571 DN 15, 20, 25



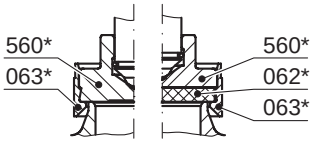
head H
pneum. lifting head



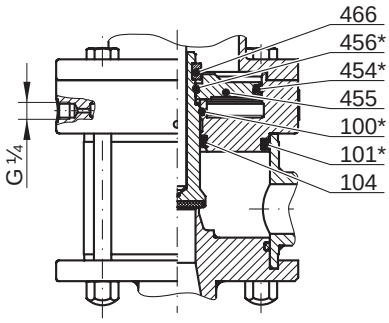
head C
gastight cap



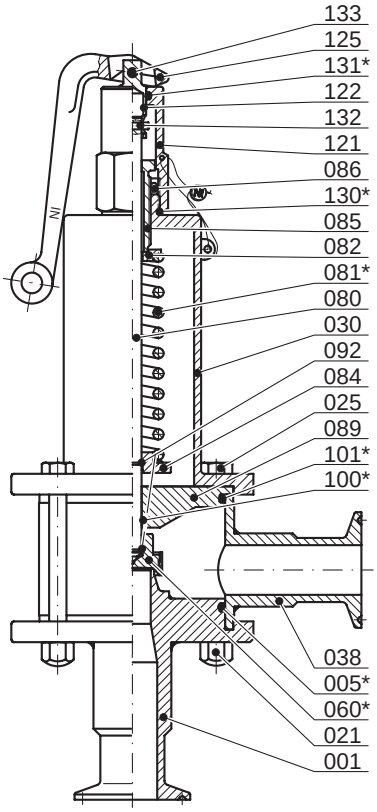
lock sleeve
on request



disc complete, pos. 060*
metal seated soft seated



pneum. lifting design



head A
gastight with lifting lever

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	104	1 turcon ring	PTFE
005*	1 o-ring	EPDM	120	1 cap (only head C)	1.4571
021	4 cap nut	A2	121	1 lifting cap (only head A+H)	1.4571
025	4 screw	A2	122	1 coupling	1.4571
030	1 spring bonnet	1.4571	125	1 lifting lever (only head A)	3.2581
038	1 outlet body	1.4571	126**	1 lock sleeve	1.4305
060*	1 disc, complete		130*	1 o-ring	EPDM
560*	1 disc	1.4571	131*	1 o-ring	EPDM
062*	1 soft sealing	see techn. appendix: KWD-1	132	1 groove pin	A4
063*	1 disc ring	1.4571	133	1 groove pin	A4
080	1 spindle	1.4571	450	1 control head	1.4571
081*	1 spring	1.4310	454*	1 o-ring	FPM
082	1 springplatte, upper	1.4571	455	1 lift plate	1.4305
084	1 springplate, lower	1.4571	456*	1 o-ring	FPM
085	1 adjusting screw	1.4305	459*	1 spring	1.4310
086	1 lock nut	1.4305	460	1 cover	1.4305
089	1 guide plate	1.4571	466	1 arresting ring	1.4305
092	2 lock ring	1.4571	467*	1 o-ring	FPM
100*	1 o-ring	EPDM	472	1 union nut	1.4305
101*	1 o-ring	EPDM			

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* expandable ** optional design, on request

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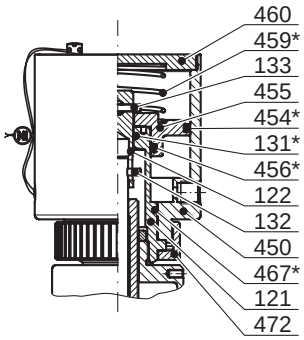
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

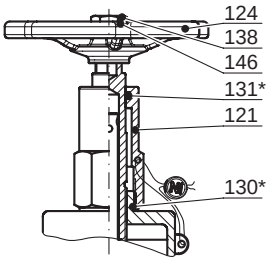
Typ 35

Typ 35.2 : Wst. / Material 1.4571

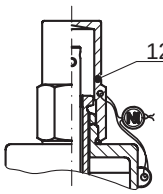
DN 32, 40
DN 50, 65



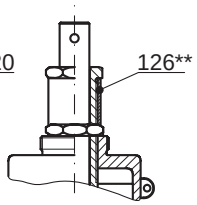
head H
pneum. lifting head



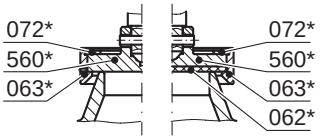
head F
gastight with lifting design



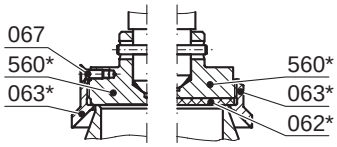
head C
gastight cap



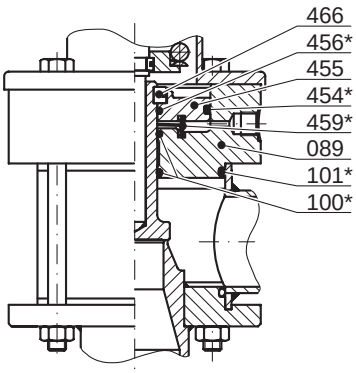
lock sleeve
on request



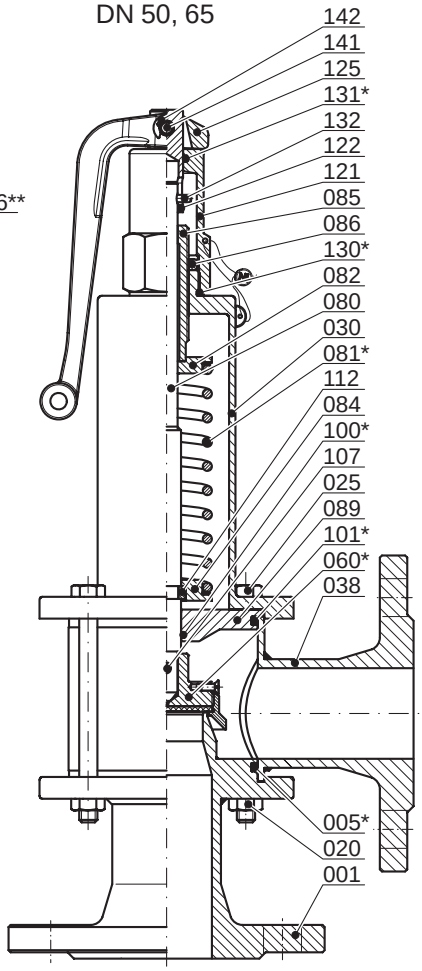
disc complete BG II, pos. 060*
metal seated soft seated



disc complete BG III, pos. 060*
metal seated soft seated



pneum. lifting design



head A
gastight with lifting lever

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	120	1 cap (only head C)	1.4571
005*	1 o-ring	EPDM	121	1 lifting cap (only head A+F+H)	1.4571
020	4 nut	A2	122	1 coupling	1.4571
025	4 screw	A2	124	1 handwheel (only head F)	3.2581
030	1 spring bonnet	1.4571	125	1 lifting lever (only head A)	3.2581
038	1 outlet body	1.4571	126**	1 lock sleeve	1.4305
060*	1 disc, complete		130*	1 o-ring	EPDM
560*	1 disc	1.4571	131*	1 o-ring	EPDM
062*	1 soft sealing	see techn. appendix: KWD-1	132	1 groove pin	A4
063*	1 disc ring	1.4571	133	1 groove pin	A4
067	1 security screw	A4	138	1 screw	A2
072*	1 locking ring	1.4571	141	1 bolt	1.4305
080	1 spindle	1.4571	142	2 stop washer	A2
081*	1 spring	1.4310	146	1 washer	A2
082	1 springplatte, upper	1.4571	450	1 control head	1.4571
084	1 springplate, lower	1.4571	454*	1 o-ring	FPM
085	1 adjusting screw	1.4305	455	1 lift plate	1.4305
086	1 lock nut	1.4305	456*	1 o-ring	FPM
089	1 guide plate	1.4571	459*	1 spring	1.4310
100*	1 o-ring	EPDM	460	1 cover	1.4305
101*	1 o-ring	EPDM	466	1 arresting ring	1.4305
107	1 spring pin	A2	467*	1 o-ring	FPM
112	1 split ring	1.4305	472	1 union nut	1.4305

* expendable

** optional design, on request

-III_engl 09'06

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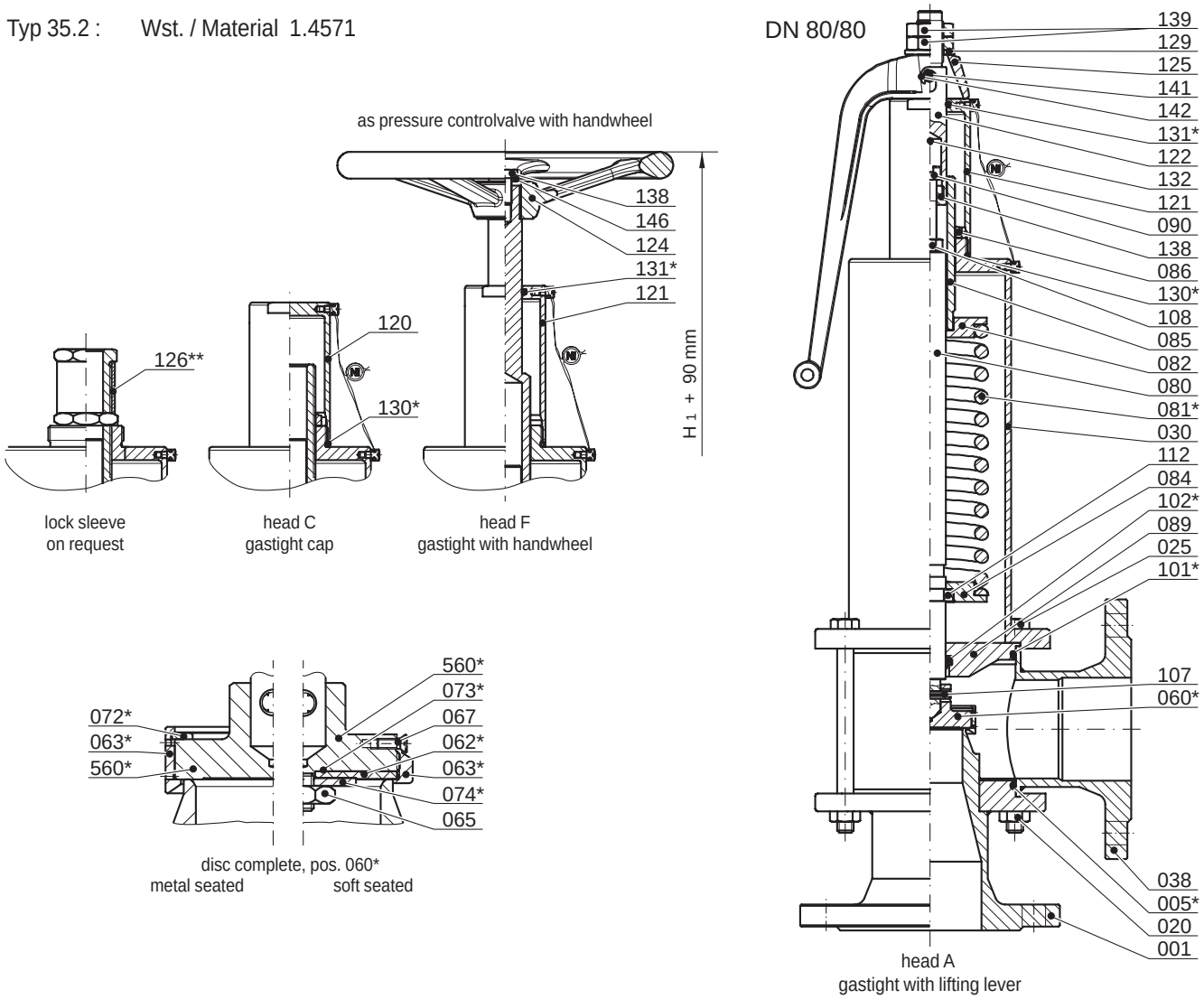
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

Typ 35.2 : Wst. / Material 1.4571

DN 80/80



Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	101*	1 o-ring	EPDM
005*	1 o-ring	EPDM	102*	1 wiper	EPDM
020	4 nut	A2	107	1 spring pin	A2
025	4 screw	A2	108	1 nut	A2
030	1 spring bonnet	1.4571	112	1 split ring	1.4305
038	1 outlet body	1.4571	120	1 cap (only head C)	1.4571
060*	1 disc, complete		121	1 lifting cap (only head A+F)	1.4571
560*	1 disc	1.4571	122	1 coupling	1.4571
062*	1 soft sealing	see techn. appendic: KWD-1	124	1 handwheel (only head F)	3.2581
063*	1 disc ring	1.4571	125	1 lifting lever (only head A)	3.2581
065	1 disc bolt	A4	126**	1 lock sleeve	1.4305
067	1 security screw	A4	129	1 pressure plate	A2
072*	1 locking ring	1.4571	130*	1 o-ring	EPDM
073*	1 o-ring	EPDM	131*	1 o-ring	EPDM
074*	1 disc plate	1.4571	132	1 groove pin	A4
080	1 spindle	1.4571	138	1 screw	A2
081*	1 spring	1.4310	139	2 nut	A2
082	1 springplate, upper	1.4571	141	1 bolt	1.4305
084	1 springplate, lower	1.4571	142	2 stop washer	A2
085	1 adjusting screw	1.4305			
086	1 lock nut	1.4305			
089	1 guide plate	1.4571			
090	1 screw	A4			

* expendable parts

** optional design, on request

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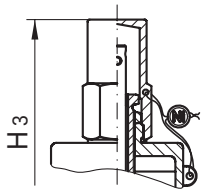
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

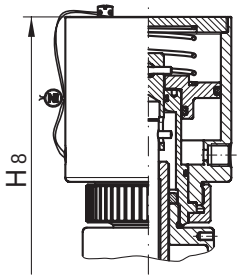
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

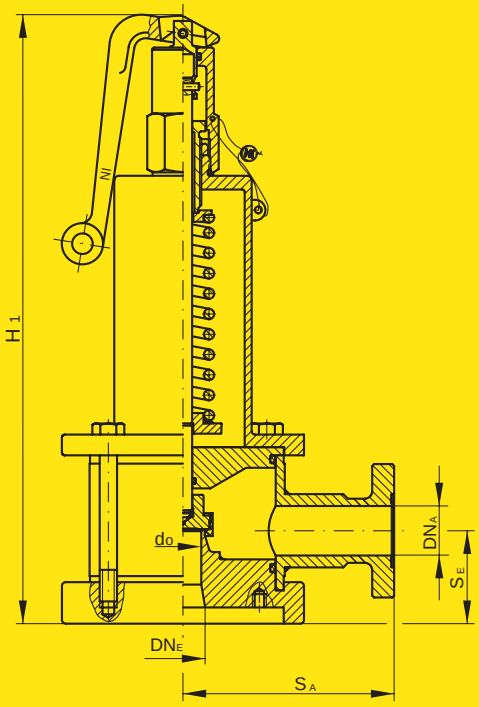
Typ 35.2 : Wst. / Material 1.4571



Kopf C / head C
gasdichte Kappe
gastight cap



Kopf H / head H
pneumatische Anlüftung
pneumatic lifting design



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Ausführung nach DIN 11864-2 Form A
design to DIN 11864-2 form A

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-1045 • do • D/G/F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 35.2 : -50°C bis / to 200°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet (DIN / ANSI)					Austritt Outlet (DIN / ANSI)				Baumaße Dimensions			Ansprechdruck Set pressure		Gewicht Weight
	DN*E / NPS		PN E / [bar]	do	SE	DN*A / NPS		PN A / [bar]	SA	H1	H3	H8	p min	p max	
	[mm]		ANSI lbs/sqi	[mm]	[mm]	[mm]		ANSI lbs/sqi	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	25	1	16-40 / 150-300	16	40	25	1	16/40 / 150-300	100	270	255	365	0,1	16	
III	50	2	16-40 / 150-300	32 40	50	50	2	16/40 / 150-300	125	382	362	-	0,12 0,15	16 15	

* DIN 11851, DIN 32676, Clamp, Aseptik-Anschlüsse usw. auf Anfrage / on request

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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

Massen- bzw. Volumenstromtabelle / Discharge capacities

BG / Size	I			III					
DN/Eintritt/Inlet	25			50			50		
d_o [mm]	16			32			40		
Medium / fluid	Wasser water 20°C [kg/h]	Sattdampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Sattdampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Sattdampf steam [kg/h]	Luft air 0°C [m^3_n/h]
$\alpha_{d\,max}$	0,35	0,46	0,46	0,31	0,48	0,48	0,23	0,33	0,33
p_e [bar(g)]									
0,1	1600,7	35,1	44,2	5671,1	124,3	156,7	7350,4	157,4	202,7
0,2	1960,5	42,2	55,5	6945,7	150,1	197,4	8052,0	172,3	226,5
0,3	2263,8	48,0	65,7	8020,2	171,3	234,3	9297,6	194,7	266,2
0,4	2531,0	53,7	76,1	8966,9	189,6	269,0	10395,0	217,8	309,0
0,5	2772,5	58,8	86,4	9822,7	211,8	311,0	11387,2	239,0	350,9
1,0	3754,0	102,9	124,4	13300,0	406,9	491,9	15418,3	433,8	524,5
1,5	4597,7	119,6	162,3	16289,1	483,6	656,5	18883,5	520,6	706,7
2,0	5309,0	159,8	202,5	18809,0	646,0	818,6	21804,8	694,6	880,3
2,5	5935,6	187,1	237,2	21029,1	764,7	969,2	24378,5	826,3	1047,2
3,0	6502,2	212,2	271,9	23036,3	885,6	1134,7	26705,4	951,4	1218,9
3,5	7023,2	239,2	306,6	24882,0	998,6	1279,6	28845,1	1072,7	1374,6
4,0	7508,1	264,9	341,3	26600,0	1105,6	1424,6	30836,7	1187,7	1530,3
4,5	7963,5	291,8	376,1	28213,6	1218,0	1569,6	32707,3	1308,4	1686,1
5,0	8394,3	317,0	410,8	29739,7	1323,3	1714,6	34476,5	1421,5	1841,9
6,0	9195,5	368,7	480,3	32578,2	1538,7	2004,9	37767,1	1652,9	2153,7
7,0	9932,2	420,8	549,9	35188,5	1756,4	2295,3	40793,1	1886,8	2465,7
8,0	10618,0	472,7	619,6	37618,1	1973,0	2585,9	43609,7	2119,5	2777,9
9,0	11262,1	524,3	689,2	39900,0	2188,5	2876,8	46255,0	2350,9	3090,3
10,0	11871,3	576,3	758,9	42058,3	2405,3	3167,8	48757,1	2583,9	3402,9
12,0	13004,3	679,7	898,5	46072,5	2837,0	3750,3	53410,7	3047,6	4028,7
14,0	14046,3	782,5	1038,3	49764,0	3266,0	4333,7	57690,2	3508,4	4655,3
15,0	14539,3	833,6	1108,2	51510,0	3479,5	4625,6	59715,0	3737,7	4967,0
16,0	15016,1	884,6	1178,2	53200,0	3692,4	4917,8	-	-	-

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Normal-Sicherheitsventil, federbelastet
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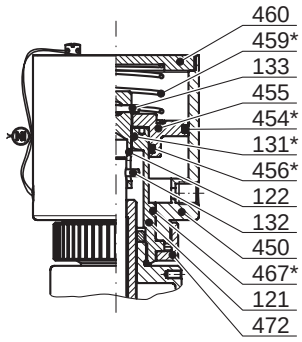
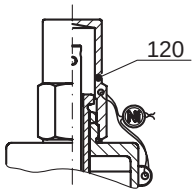
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 35

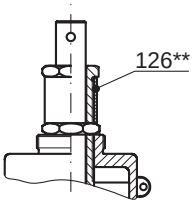
Typ 35.2 : Wst. / Material 1.4571



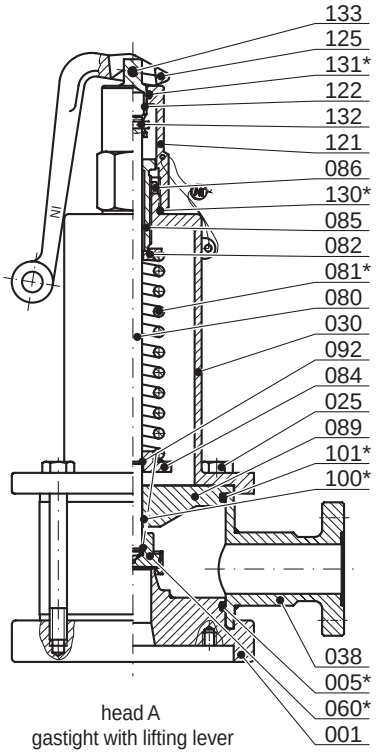
head H
pneum. lifting head



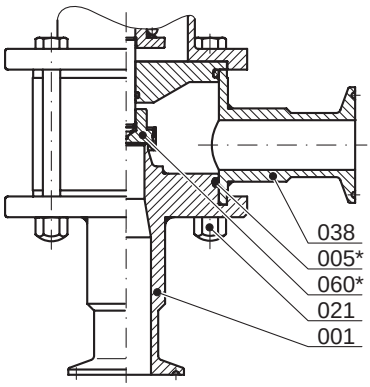
head C
gastight cap



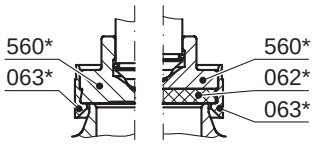
lock sleeve
on request



head A
gastight with lifting lever
design to DIN 11864-2 form A



clamp liner
design to DIN 32676



disc complete, pos. 060*
metal seated soft seated

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	101*	1 o-ring	EPDM
005*	1 o-ring	EPDM	120	1 cap (only head C)	1.4571
021	4 cap nut	A2	121	1 lifting cap (only head A+H)	1.4571
025	4 screw	A2	122	1 coupling	1.4571
030	1 spring bonnet	1.4571	125	1 lifting lever (only head A)	3.2581
038	1 outlet body	1.4571	126**	1 lock sleeve	1.4305
060*	1 disc, complete		130*	1 o-ring	EPDM
560*	1 disc	1.4571	131*	1 o-ring	EPDM
062*	1 soft sealing	see techn. appendix: KWD-1	132	1 groove pin	A4
063*	1 disc ring	1.4571	133	1 groove pin	A4
080	1 spindle	1.4571	450	1 control head	1.4571
081*	1 spring	1.4310	454*	1 o-ring	FPM
082	1 springplatte, upper	1.4571	455	1 lift plate	1.4305
084	1 springplate, lower	1.4571	456*	1 o-ring	FPM
085	1 adjusting screw	1.4305	459*	1 spring	1.4310
086	1 lock nut	1.4305	460	1 cover	1.4305
089	1 guide plate	1.4571	467*	1 o-ring	FPM
092	2 lock ring	1.4571	472	1 union nut	1.4305
100*	1 o-ring	EPDM			

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* expendable

** optional design, on request

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Normal-Sicherheitsventil, federbelastet
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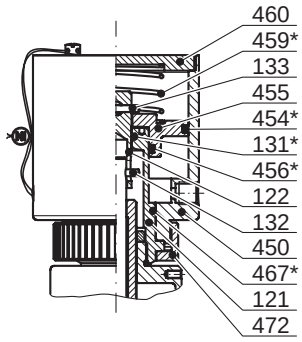
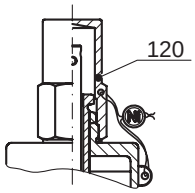
Typ 35

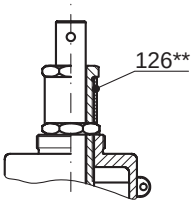
Typ 35.2 : Wst. / Material 1.4571



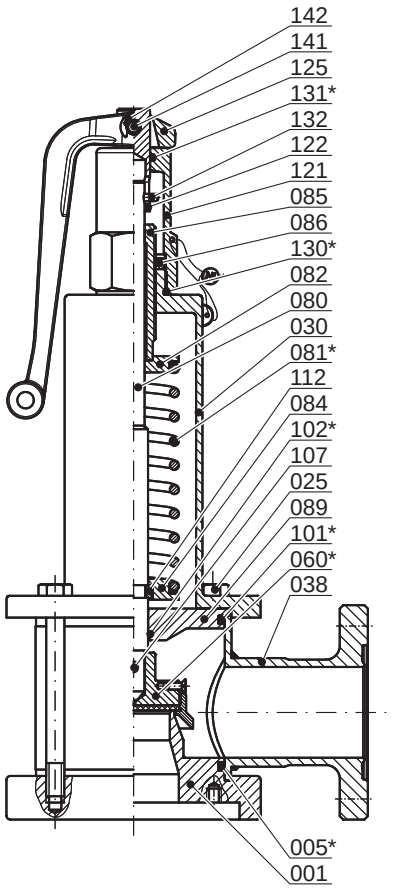
head H
pneum. lifting head



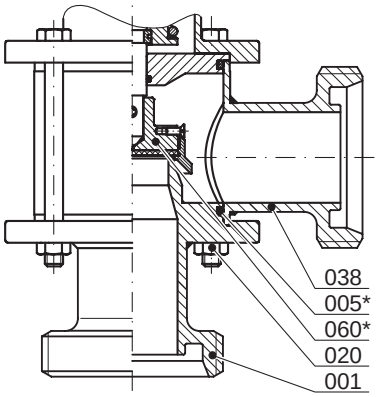
head C
gastight cap



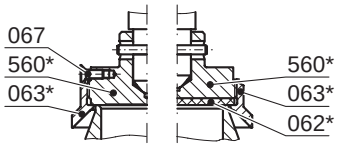
lock sleeve
on request



head A
gastight with lifting lever
design to DIN 11864-2 form A



male union
design to
DIN 11851 / 11864-1



disc complete, pos. 060*
metal seated soft seated

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	112	1 split ring	1.4305
005*	1 o-ring	EPDM	120	1 cap (only head C)	1.4571
020	4 nut	A2	121	1 lifting cap (only head A+H)	1.4571
025	4 screw	A2	122	1 coupling	1.4571
030	1 spring bonnet	1.4571	125	1 lifting lever (only head A)	3.2581
038	1 outlet body	1.4571	126	1 lock sleeve	1.4305
060*	1 disc, complete		130*	1 o-ring	EPDM
560*	1 disc	1.4571	131*	1 o-ring	EPDM
062*	1 soft sealing	see techn. appendix: KWD-1	132	1 groove pin	A4
063*	1 disc ring	1.4571	133	1 groove pin	A4
067	1 security screw	A4	141	1 bolt	1.4305
080	1 spindle	1.4571	142	2 stop washer	A2
081*	1 spring	1.4310	450	1 control head	1.4571
082	1 springplatte, upper	1.4571	454*	1 o-ring	FPM
084	1 springplate, lower	1.4571	455	1 lift plate	1.4305
085	1 adjusting screw	1.4305	456*	1 o-ring	FPM
086	1 lock nut	1.4305	459*	1 spring	1.4310
089	1 guide plate	1.4571	460	1 cover	1.4305
101*	1 o-ring	EPDM	467*	1 o-ring	FPM
102*	1 wiper	EPDM	472	1 union nut	1.4305
107	1 spring pin	A2			

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* expendable

** optional design, on request

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Normal-Sicherheitsventil, federbelastet
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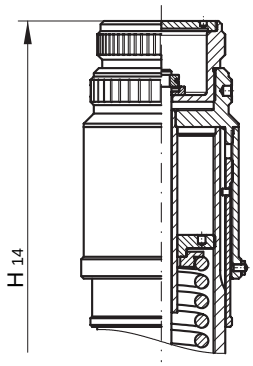
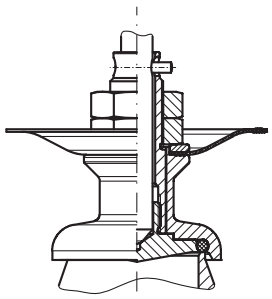
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 44

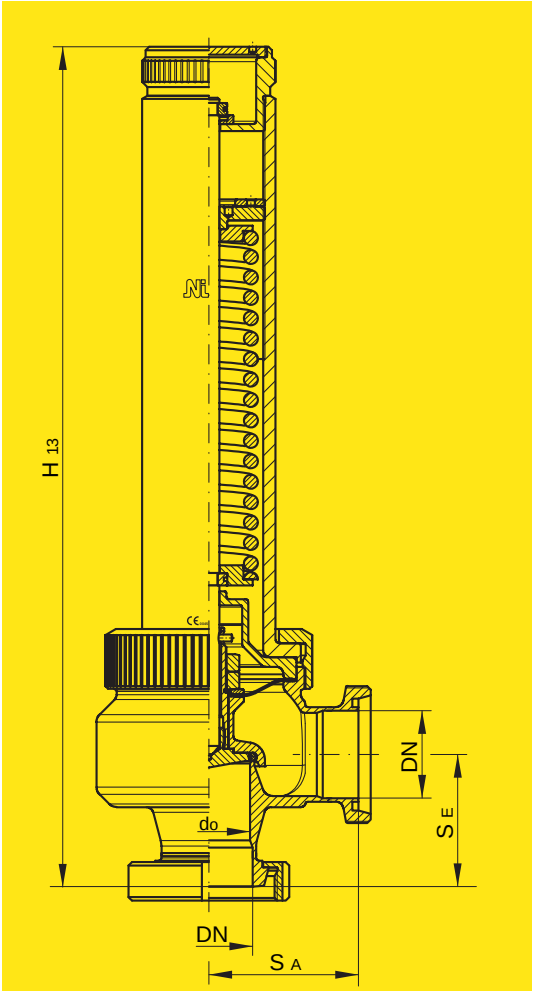
Typ 44.2 : Wst. / Material 1.4404 / 1.4404



Kopf G, anlüftbar
head G, liftable



weich dichtend
soft seated



Kopf M, anlüftbar
head M, liftable

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-XXXX • do • D/G/F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage:	senkrecht
Installation position:	vertical

Anschlüsse:
- Gewindestutzen
- Klemmstutzen
- Kleinflansch

Connections:
- male union
- clamp liner
- flange

BG Size	Eintritt Inlet		Austritt Outlet		Baumaße Dimensions			Aussflussziffer Coefficient		Ansprechdruck Set pressure		Gewicht Weight
	DN	S_E	DN	S_A	d_o	H_{13}	H_{14}	α_d	α_d	p_{min}	p_{max}	
		[mm]		[mm]	[mm]	[mm]	[mm]	D/G	F	[bar(g)]	[bar(g)]	[kg]
I*												
II*												
III	32	75	50/65	85	27	479	514	0,50	0,38	0,2	16	11,3
	40				37			0,46	0,30			11,6
	50				47			0,36	0,21			11,3
IV*												

* in Vorbereitung / in preparation

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Normal-Sicherheitsventil, federbelastet
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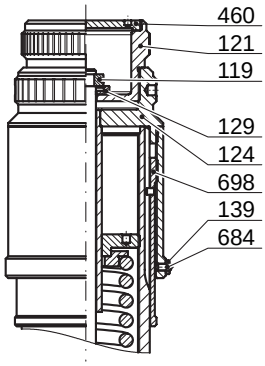
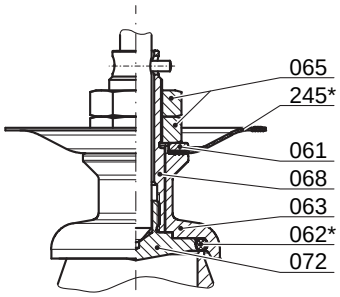
for steam, gases and liquids in closed completion

Typ 44

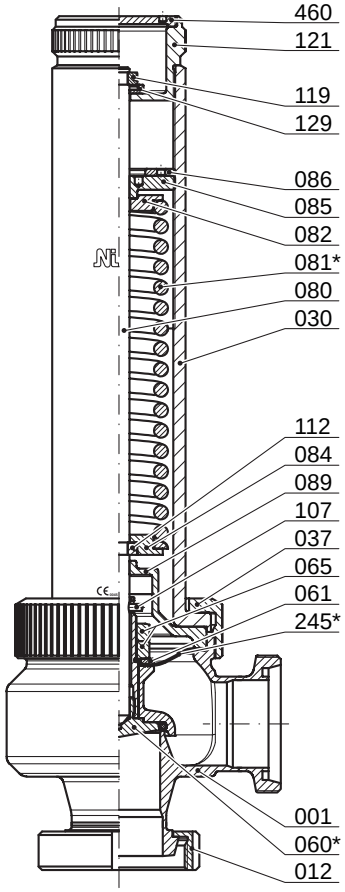
Typ 44.2 : Wst. / Material 1.4404 / 1.4404



head G, liftable



disc complete, pos. 060*
soft seated



head M, liftable

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4404	085	1 adjusting screw	1.4305
012	1 union nut	1.4404	086	1 lock nut (only head M)	1.4305
030	1 spring bonnet	1.4404	089	1 guide plate	1.4404
037	1 union nut	1.4404	107	1 spring pin	A4
060*	1 disc, complete		112	1 split ring	1.4305
061	1 pressure piece	1.4404	119	1 locking ring	A2
062*	1 soft sealing	see techn. appendix: KWD-1	121	1 lifting cap (only head G,M)	1.4305
063	1 disc ring	1.4404	124	1 handwheel (only head G)	1.4571
065	2 disc bolt	A4	129	1 pressure plate	A4
068	1 disc guidance	1.4404	139	1 nut (only head G)	A4
072	1 locking ring	1.4404	460	1 cover (only head G,M)	1.4305
245*	1 diaphragm	EPDM	684	1 arresting screw	A2
080	1 spindel	1.4404	698	1 scale (only head G)	1.4571
081*	1 spring	1.4310			
082	1 springplate, upper	1.4305			
084	1 springplate, lower	1.4305			

* expendable parts

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Gewinde-Sicherheits- / Entlastungsventile, freiabblasend
Open discharge Safety- / Relief-Valves with screwed inlet

Inhaltsverzeichnis
Index

Ventil Valve	Verwendung Use	Medium	*	DN E	PN E bar max	Köpfe Heads
Typ 4	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded für ungiftige Dämpfe, Gase und Flüssigkeiten, anlüftbar for non-toxic steam, gases and liquids, liftable	D/G/F	-	1/4 - 1/2	160	C, D
Typ 6	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für ungiftige Dämpfe und Gase, kleine Drücke for non-toxic steam and gases, low pressure	D/G	B	1/2 - 1	10	C, E
Typ 11	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded für ungiftige Dämpfe und Gase, anlüftbar for non-toxic steam and gases, liftable	D/G	-	3/8 - 2	100	M
Typ 66	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für ungiftige Dämpfe und Gase, großer Durchs., anlüft. for non-toxic steam and gases, high capacity, liftable	D/G/F	B	1/2 - 2	40	M
Typ 67	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für ungiftige Dämpfe und Gase, kleine Drücke, anlüftbar for non-toxic steam and gases, low pressure, liftable für Fahrzeugbehälter / for mobile tanks	D/G	B	1	6	C, D
Typ 69	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für Fahrzeugbehälter mit flüssigen, körnigen oder staubförmigen Gütern for container with liquid, granular or dusty goods	F/K/S	B	3/4 - 1½	6	M
Typ 98	Normal-Sicherheitsventil, mit Unterdruckfunktion Standard-Safety-Valve, with underpressure function für ungiftige Dämpfe und Gase, kleine Drücke for non-toxic steam and gases, low pressure	D/G	B	1	6	D
Typ 110	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für ungiftige Dämpfe und Gase, anlüftbar for non-toxic steam and gases, liftable	D/G	B	3/8 - 2	100	M

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -
- flüssige, körnige oder staubförmige Güter - F/K/S -
- liquids, granular or dusty products.....

* Bauteilgeprüft / TÜV-Approval..... - B -

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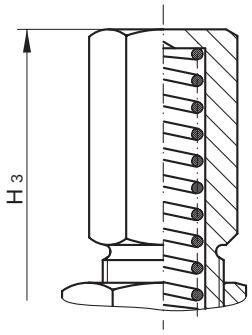
Entlastungsventil, federbelastet
Relief-Valve, springloaded

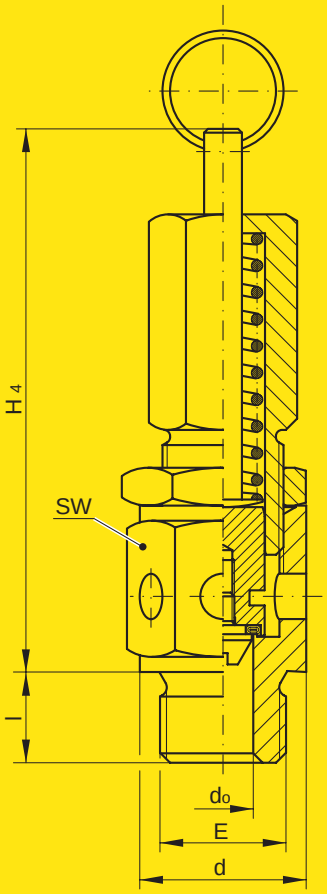
für ungiftige Dämpfe, Gase und Flüssigkeiten
for non-toxic steam, gases and liquids

Typ 4

Typ 4.3 : Wst. / Material 2.0401



Kopf C
head C



Kopf D, anlüftbar
head D, liftable

Verwendung / Use

Betriebstemperatur / operating temperature

Typ 4.3: -10°C bis / to 130°C

Kegel mit O-Ring / disc with o-ring

Kegel mit Kugel / disc with ball

≤ 2,0 bar

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Eintritt Inlet			Austritt Outlet	Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
E	d	l	A	H_3	H_4	SW	d_o / Sitz-Ø	p min	p max	
G	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[g]
1/4	18	12				22	6 / 8	0,4	65	120
3/8	22	12				22	8 / 8	0,4	65	140
3/8	22	12	frei / free	64	72	22	6 / 6	65	120	140
1/2	24	14				24	8 / 8	0,4	65	160
1/2	24	14				24	6 / 6	65	120	160

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für ungiftige Dämpfe, Gase und Flüssigkeiten
for non-toxic steam, gases and liquids

Typ 4

Volumenstromtabelle / Discharge capacities

Medium fluid / p_e [bar(g)]	Luft (0°C) air $[m^3_n/h]$	Kohlendioxid (0°C) carbondioxide $[m^3_n/h]$
0,4	0,26	0,21
0,5	0,29	0,23
0,6	0,32	0,26
0,7	0,35	0,28
0,8	0,38	0,30
0,9	0,41	0,32
1	0,43	0,35
3	1,08	0,87
5	1,62	1,31
7	2,16	1,76
10	2,98	2,44
20	5,70	4,87
30	8,42	
40	11,1	
60	16,6	
70	19,4	
80	22,1	
90	24,9	
100	27,6	
110	30,3	
120	33,0	

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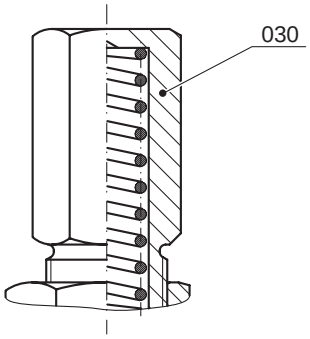
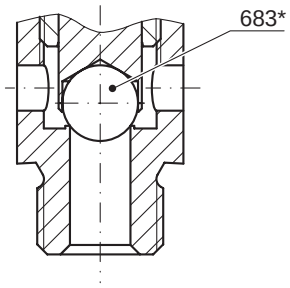
Typ 4

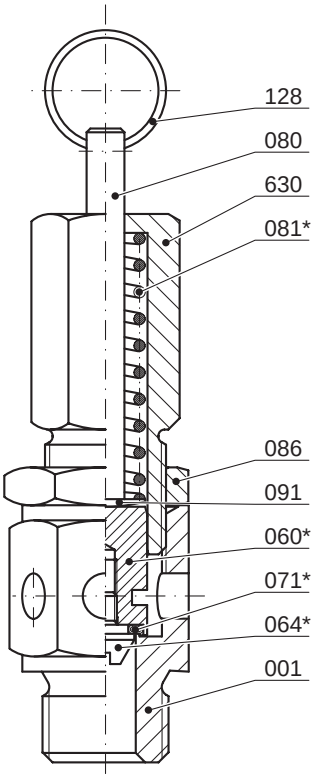
Typ 4.3 : Wst. / Material 2.0401



Kopf C
head C



mit EPDM-Kugel
with EPDM-ball



Kopf D, anlüftbar
head D, liftable

Pos.	Bezeichnung	Werkstoff Kopf C	Werkstoff Kopf D	Item	Description	Material head C	Material head D
001	1 Eintrittskörper	2.0401	2.0401	001	1 inlet body	2.0401	2.0401
030	1 Federhaube (nur Kopf C)	2.0401		030	1 spring bonnet (only head C)	2.0401	
060*	1 Kegel komplett	2.0401	2.0401	060*	1 disc, complete	2.0401	2.0401
064*	1 Kegelschraube	2.0401	2.0401	064*	1 disc screw	2.0401	2.0401
071*	1 O-Ring	siehe tech. Anhang: KWD-1		071*	1 o-ring	see tech. appendix: KWD-1	
080	1 Spindel		2.0401	080	1 spindle		2.0401
081*	1 Feder	1.4310	1.4310	081*	1 spring	1.4310	1.4310
086	1 Gegenmutter	2.0401	2.0401	086	1 lock nut	2.0401	2.0401
091	1 Druckstück	2.0401		091	1 pressure piece	2.0401	
128	1 Lüftering (nur Kopf D)		2.0401/NI	128	1 lifting ring (only head D)		2.0401/NI
630	1 Federhaube (nur Kopf D)		2.0401	630	1 spring bonnet (only head D)		2.0401
683*	1 Kugel	EPDM	EPDM	683*	1 ball	EPDM	EPDM

* Verschleißteile / expendable parts

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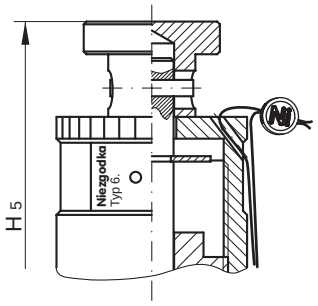
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

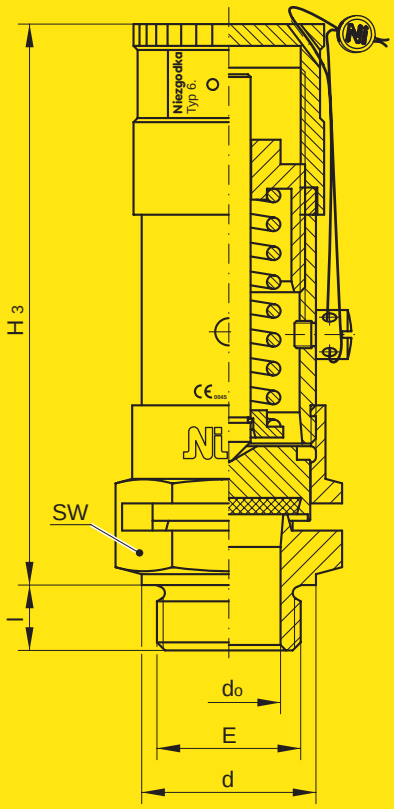
für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

Typ 6

Typ 6.2 : Wst. / Material 1.4571 / 1.4301
Typ 6.3 : Wst. / Material 2.0401 / 2.0401



Kopf E, gestützter Knopf
head E, stayed button



Kopf C, Kappe
head C, cap

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-604 • do • D/G • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 6.2: -60°C bis / to 130°C
Typ 6.3: -10°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

Eintritt * Inlet *			Austritt Outlet	Baumaße Dimensions				Ansprechdruck Set pressure		Gewicht Weight
E	d	l	A	H_3	H_5	SW	do	p min	p max	
G	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
1/2	26						13	0,05	10	0,4
3/4	32	12	frei / free	103	120	36	19	0,05	6	0,5
1 [1)]	36						22	0,05	10	0,5

* andere Anschlüsse auf Anfrage / other inlets on request

1) Ausführung G1, alternativ 1.4404 / design G1, alternative 1.4404

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Typ 6

Volumenstromtabelle / Discharge capacities

Medium fluid	Luft (0°C) air [m^3_n/h]			Kohlendioxid (0°C) carbondioxide [m^3_n/h]			Stickstoff (0°C) nitrogen [m^3_n/h]		
Eintritt / Inlet	1/2	3/4	1	1/2	3/4	1	1/2	3/4	1
d_o / mm	13	19	22	13	19	22	13	19	22
α_d, max	0,70	0,40	0,30	0,70	0,40	0,30	0,70	0,40	0,30
p_e / [bar(g)]									
0,05	38,4	40,2	35,2	31,2	32,7	28,6	39,1	40,9	35,9
0,1	45,1	49,9	43,0	36,5	40,6	34,8	45,8	50,8	43,7
0,2	57,0	65,3	55,4	46,0	52,8	44,8	58,0	66,5	56,4
0,3	68,0	77,6	70,5	54,8	62,6	56,8	69,2	78,9	71,7
0,4	77,0	89,3	82,3	61,9	71,7	66,1	78,2	90,8	83,7
0,5	85,5	100,5	89,8	68,5	80,5	72,0	86,9	102,1	91,3
1,0	122,3	146,9	136,8	97,2	116,9	108,8	124,4	149,0	138,9
1,5	158,9	190,3	186,2	126,3	151,2	148,1	162,1	193,5	189,4
2,0	197,6	235,9	233,0	157,0	187,9	185,1	200,8	240,2	236,2
2,5	234,8	283,5	282,7	187,4	226,4	225,5	239,1	287,8	287,0
3,0	273,1	333,4	335,2	218,3	266,7	268,6	277,4	338,8	340,6
3,5	308,0	375,9	378,0	246,6	301,6	302,6	312,3	382,4	384,5
4,0	342,9	418,5	420,8	275,0	335,4	337,7	348,3	425,0	427,3
4,5	377,8	461,1	463,7	304,2	371,3	372,9	384,3	468,7	471,3
5,0	412,7	503,7	506,5	332,5	406,2	408,0	419,2	512,4	514,1
6,0	482,5	589,0	592,3	389,3	476,2	478,4	490,1	597,7	601,0
7,0	552,4		678,1	448,0		549,9	561,1		689,0
8,0	622,4		763,9	506,0		621,3	632,2		775,9
9,0	692,4		849,8			694,0			862,9
10,0	762,4		935,8			766,7			950,0

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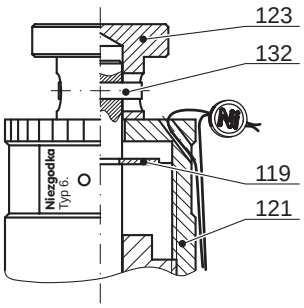
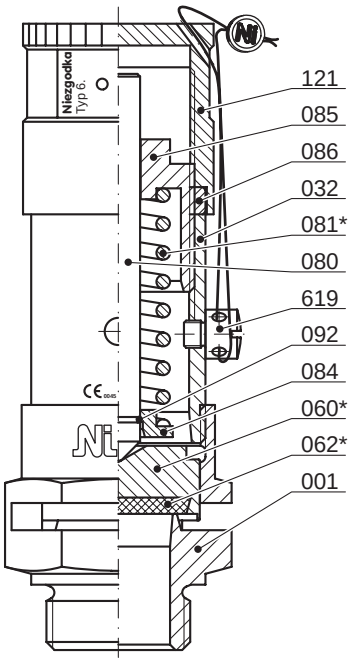
Typ 6

Typ 6.2 : Wst. / Material 1.4571 / 1.4301
Typ 6.3 : Wst. / Material 2.0401 / 2.0401



head E
stayed button



head C, cap

Item	Description	Material 6.2	Material 6.3	Item	Description	Material 6.2	Material 6.3
001	1 inlet body	1.4571 [1)]	2.0401	119	1 locking ring (only head E)	1.4122	1.4122
032	1 bonnet pipe	1.4301	2.0401	120	1 cap (only head C)	1.4305	2.0401
060*	1 disc, complete	1.4305	2.0401	121	1 lifting cap (only head E)	1.4305	2.0401
062*	1 soft sealind	see techn. appendix: KWD-1		123	1 lifting button (only head E)	1.4305	2.0401
080	1 spindle	1.4305	1.4305	132	1 groove pin (only head E)	A4	A4
081*	1 spring	1.4310	1.4310	619	1 lead screw	A2	MS
084	1 springplate, lower	1.4305	2.0401				
085	1 adjusting screw	1.4305	2.0401				
086	1 adjusting screw	1.4305	2.0401				
092*	1 lock ring	1.4571	1.4571				

* expendable parts
[1)] Design G1, alternative 1.4404

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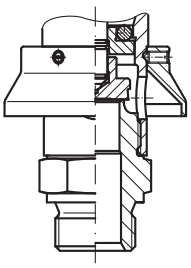
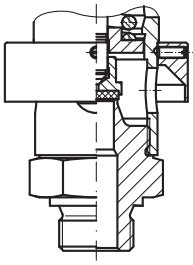
for non-toxic steam, gases and liquids

Typ 11

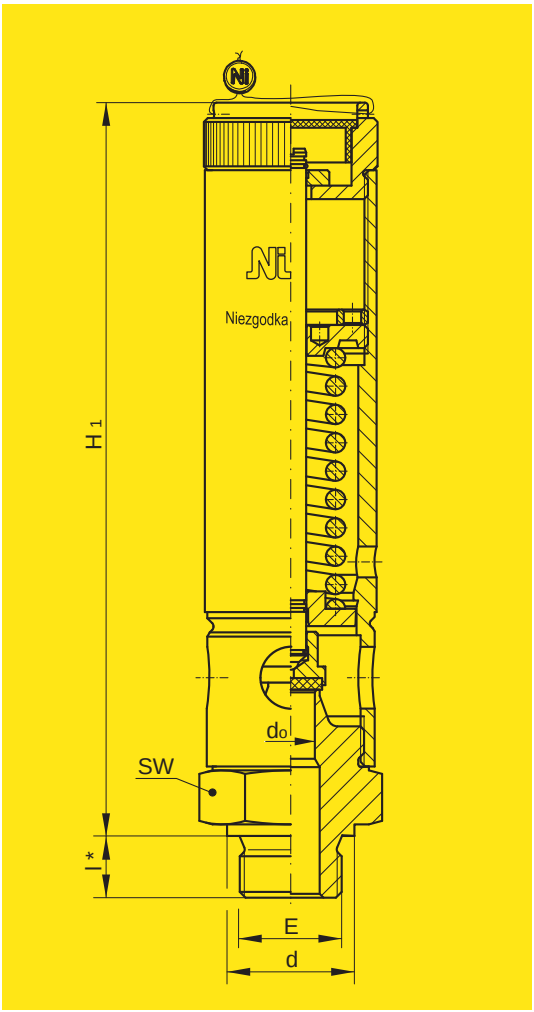
Typ 11.1: Wst. / Material 1.4104 / 2.0401
Typ 11.2: Wst. / Material 1.4571 / 1.4301



BG I mit Strömungsumlenkring / size I with protection ring empfohlen bei allen d_o / recommended at each d_o für / for p > 30 bar(g)



BG II mit Strömungsumlenkring / size II with protection ring empfohlen bei / recommended at
d_o 12,5; d_o 16: für / for p > 30 bar(g)
d_o 22: für / for p > 10 bar(g)
d_o 27: für / for p > 8 bar(g)



Kopf M, anlüftbar
head M, liftable

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 11.1: -10°C bis / to 130°C
Typ 11.2: -60°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet			Austritt Outlet	Baumaße Dimensions					Ansprechdruck Set pressure		Gewicht Weight
	E	d	l*	A	H_1			SW	d_o	p_{min}	p_{max}	
	G/NPT	[mm]	[mm]	-	[mm]			[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	3/8	22	12	frei / free	153			32	10	0,1	52	0,5
									8	15	84	
	1/2	26	14						12,5	0,1	45	
									10	0,1	52	
									8	15	84	
	3/4	32	16						16	0,05	31	
									12,5	0,1	45	
									10	0,1	52	
									8	15	84	
II	1/2	26	14	frei / free	190			41	12,5	0,09	67	0,8
	3/4	32	16						16	0,06	60	
									12,5	0,09	67	
	1	39	18						16	0,06	60	
									12,5	0,09	67	
	1¼**	49	20					50	27	0,03	30	
									22	0,04	50	
									16	0,06	60	
	1½**	55	22					55	27	0,03	30	1,0
									22	0,04	50	
	2**	60	24					60	27	0,03	30	

* Maß l bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l for NPT-design according to ANSI B 2.1
** NPT auf Anfrage / NPT on request

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

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Typ 11

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I				II			
d_O / mm	8,0	10	12,5	16	12,5	16	22	27
α_d, max	0,033	0,033	0,022	0,035	0,08	0,08	0,08	0,08
p_e / [bar(g)]								
0,05				3,0				18,7
0,1		0,8	1,0	3,5	5,0	8,2	15,5	23,4
0,2		1,2	1,3	4,4	6,4	10,5	19,8	29,9
0,3		1,5	1,6	5,2	7,6	12,4	23,5	35,4
0,4		1,9	1,9	5,8	8,8	14,3	27,1	40,6
0,5		2,1	2,2	6,5	9,8	16,0	30,2	45,5
1,0		2,9	3,2	9,6	13,8	22,6	42,7	64,3
1,5		3,6	4,2	12,2	17,6	28,8	54,5	82,1
2,0		4,5	5,4	15,0	21,4	35,0	66,2	99,6
2,5		5,6	6,6	17,8	25,1	41,2	77,9	117,3
3,0		7,6	7,9	20,7	28,9	47,3	89,4	134,6
3,5		8,6	9,0	23,3	32,5	53,3	100,8	151,8
4,0		9,6	10,0	26,0	36,2	59,4	112,2	169,0
4,5		10,5	11,0	28,6	39,9	65,4	123,7	183,2
5		11,5	12,0	32,3	43,6	71,4	135,1	203,5
6		13,5	14,0	36,6	51,0	83,5	157,9	237,9
7		15,4	16,1	41,8	58,4	95,6	180,8	272,4
8		17,4	18,1	47,1	65,8	107,8	203,7	306,8
9		19,3	20,1	52,4	73,2	119,9	226,6	341,3
10		21,3	22,2	57,8	80,6	132,0	249,5	375,9
12		25,2	26,2	68,4	95,4	156,3	295,4	445,0
14		29,1	30,3	79,0	110,2	180,6	341,4	514,2
15	19,9	31,1	32,4	84,3	117,6	192,7	364,4	548,8
16	21,1	33,0	34,4	89,7	125,1	204,9	387,4	583,5
18	23,6	36,9	38,5	100,3	139,9	229,3	433,5	652,9
20	26,2	40,9	42,6	111,0	154,8	253,7	479,6	722,4
25	32,5	50,7	52,8	137,7	192,2	314,8	595,2	896,5
30	38,8	60,6	63,1	164,6	229,6	376,2	711,2	1071,2
35	45,1	70,5	73,5		267,2	437,7	827,6	
40	51,5	80,5	83,8		304,9	499,5	944,3	
45	57,9	90,5	94,2		342,7	561,5	1061,5	
50	64,3	100,5			380,6	623,6	1179,0	
60	77,2				456,9	748,6		
70	90,2							
80	103,3							

Alle anderen Werte gelten mit und ohne Strömungsumlenkring (Pos. 681). /
Other values are valid with and without protection ring (pos. 681).

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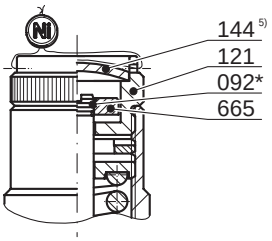
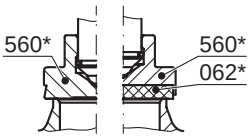
Typ 11

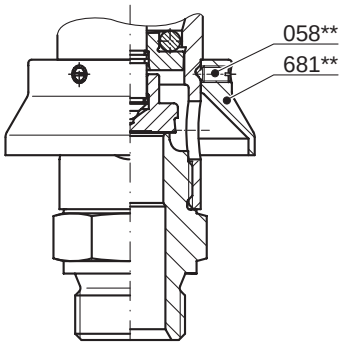
Typ 11.1: Wst. / Material 1.4104 / 2.0401
Typ 11.2: Wst. / Material 1.4571 / 1.4301



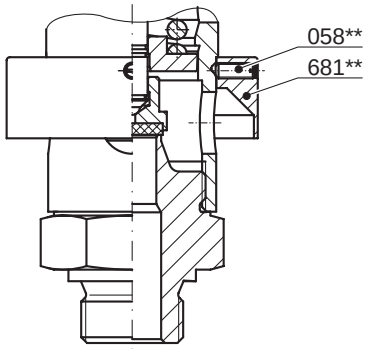
Kopf M BG I, anlüftbar
head M size I, liftable



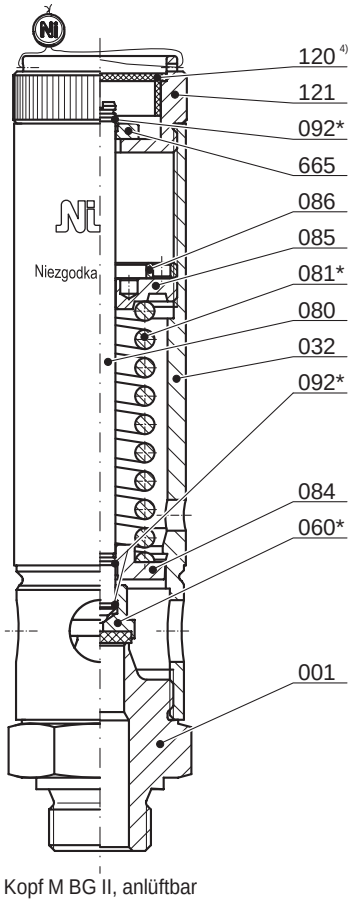
Kegel komplett, Pos. 060*
disc complete, pos. 060*
metall. dichtend / metal seated
weich dichtend / soft seated



BG I mit Strömungsumlenkring /
size I with protection ring



BG II mit Strömungsumlenkring /
size II with protection ring



Kopf M BG II, anlüftbar
head M size II, liftable

Pos.	Bezeichnung	Werkstoff 11.1	Werkstoff 11.2	Item	Description	Material 11.1	Material 11.2
001	1 Eintrittskörper	1.4104	1.4571	001	1 inlet body	1.4104	1.4571
032	1 Haubenrohr	2.0401	1.4301	032	1 bonnet pipe	2.0401	1.4301
060*	1 Kegel komplett			060*	1 disc, complete		
560*	1 Kegel, Rohling	1.4571 1)	1.4571	560*	1 disc	1.4571 1)	1.4571
062* 2)	1 Kegeldichtung	siehe techn. Anhang: KWD-1		062* 2)	1 soft sealing	see techn. appendix: KWD-1	
080	1 Spindel	1.4305	1.4305	080	1 spindle	1.4305	1.4305
081*	1 Feder	1.4310	1.4310	081*	1 spring	1.4310	1.4310
084	1 Federteller, unten	1.4104 3)	1.4571	084	1 springplate, lower	1.4104 3)	1.4571
085	1 Druckschraube	2.0401	1.4305	085	1 adjusting screw	2.0401	1.4305
086	1 Gegenmutter	2.0401	1.4305	086	1 lock nut	2.0401	1.4305
092	3 Sprengring	1.4571	1.4571	092	3 lock ring	1.4571	1.4571
120 4)	1 Kappe	LD-PE	LD-PE	120 4)	1 cap	LD-PE	LD-PE
121	1 Lüftekappe	2.0401	1.4305	121	1 lifting cap	2.0401	1.4305
144 5)	1 Verschlussscheibe	A2	A2	144 5)	1 lock washer	A2	A2
665	1 Scheibe	1.4305	1.4305	665	1 washer	1.4305	1.4305
	auf Anfrage				on request		
058**	3 Gewindestift	A4	A4	058**	3 screwed pin	A4	A4
681**	1 Strömungsumlenkring	2.0401	1.4305	681**	1 protection ring	2.0401	1.4305

* Verschleißteile / expendable parts
** Option, auf Anfrage / optional design, on request
1) BG I, weich dichtende Ausf.: 1.4104 / size I, soft sealing design: 1.4104
3) BG II: 1.4571 / size II: 1.4571
4) nur BG II / only size II
5) nur BG I / only size I

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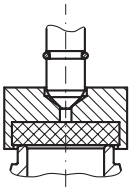
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

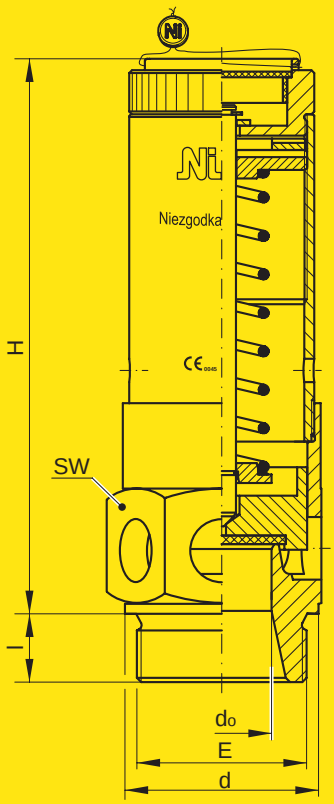
für ungiftige Dämpfe, Gase und Flüssigkeiten, großer Durchsatz
for non-toxic steam, gases and liquids, high capacity

Typ 66

Typ 66.2 : Wst. / Material 1.4571 / 1.4301
Typ 66.3 : Wst. / Material 2.0401 / 2.0401



weich dichtend / soft seated



Kopf M, anlüftbar
head M, liftable

Bauteilkennzeichen / TÜV - Approval

1/4 bis / to 2: TÜV • SV • XX-809 • do • D/G • α_d • p
3/8 bis / to 1: TÜV • SV • XX-809 • do • F • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 66.2: -60°C bis / to 130°C
Typ 66.3: -10°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Eintritt Inlet			Austritt Outlet	Baumaße Dimensions			Ansprechdruck Set pressure				Gewicht Weight
E	d	l	A	H	SW	do / Sitz	p min	p max	p min	p max	
G	[mm]	[mm]		[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[bar(g)]	[bar(g)]	[kg]
							D / G		F		
1/4	18	12		75	22	7/10	0,10	35			0,12
3/8	22	12		75	22	10	0,20	35	0,45	15	0,12
1/2	26	14		90	27	12,5	0,10	35	0,10	25	0,21
3/4	32	16		105	32	15	0,15	20	0,15	20	0,38
1	36	18	frei / free	115	36	18	0,10	15	0,10	25	0,50
1¼	49	20		170	50	23	0,10	10			1,80
1½	55	22		180	60	30	0,10	10			2,30
2	68	24		195	70	35	0,05	0,19			2,60
2	68	24		230	70	35	0,20	10			2,90

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für ungiftige Dämpfe, Gase und Flüssigkeiten, großer Durchsatz
for non-toxic steam, gases and liquids, high capacity

Typ 66

Massen- bzw. Volumenstromtabelle / Discharge capacities

d_o [mm]	7 / 10	10		12,5		15		18		23	30	35
Medium / fluid	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Luft air 0°C [m^3_n/h]	Luft air 0°C [m^3_n/h]	Luft air 0°C [m^3_n/h]	Luft air 0°C [m^3_n/h]
Ausfluss-ziffer / p_e [bar(g)]	$\alpha_{d\,max}$ 0,82	$\alpha_{d\,max}$ 0,53	$\alpha_{d\,max}$ 0,72	$\alpha_{d\,max}$ 0,47	$\alpha_{d\,max}$ 0,64	$\alpha_{d\,max}$ 0,59	$\alpha_{d\,max}$ 0,78	$\alpha_{d\,max}$ 0,56	$\alpha_{d\,max}$ 0,74	$\alpha_{d\,max}$ 0,82	$\alpha_{d\,max}$ 0,79	$\alpha_{d\,max}$ 0,67
0,05							32,9		45,1	78,5	129	152
0,1	11,3	669	18,5	927	25,8	1670	47,3	2290	64,9	113	186	218
0,3	20,4	1160	34,4	1600	47,8	2900	86,8	3970	119	211	345	400
0,5	27,2	1500	46,8	2070	65	3750	117	5120	160	286	468	540
1,0	40,6	2120	71,8	2930	99,5	5300	177	7250	241	437	714	818
1,5	52,7	2590	94	3590	130	6490	229	8870	313	569	931	1070
2,0	64,4	2990	115	4150	159	7500	280	10200	382	693	1130	1310
2,5	75,6	3350	135	4640	188	8380	330	11400	451	816	1340	1540
3,0	86,4	3660	155	5080	215	9180	377	12500	515	932	1530	1760
4,0	108	4230	193	5870	268	10600	471	14500	644	1160	1910	2200
5,0	129	4730	232	6560	322	11800	565	16200	773	1400	2290	2640
6,0	151	5180	271	7180	376	13000	660	17700	901	1630	2670	3080
8,0	194	5990	348	8300	483	15000	848	20500	1160	2100	3440	3970
10,0	237	6690	425	9270	591	16700	1040	22900	1420	2560	4200	4850
12,0	281	7330	503	10100	699	18300	1220	25100	1670			
14,0	324	7920	580	11000	806	19800	1410	27100	1930			
15,0	346	8200	619	11300	860	20500	1510	28100	2060			
16,0	367		658	11700	914	21200	1600	29000				
18,0	411		736	12400	1020	22500	1790	30700				
20,0	454		814	13100	1130	23700	1980	32400				
25,0	563		1010	14600	1400			36200				
30,0	672		1200		1670							
35,0	781		1400		1940							

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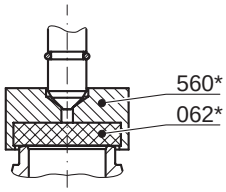
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

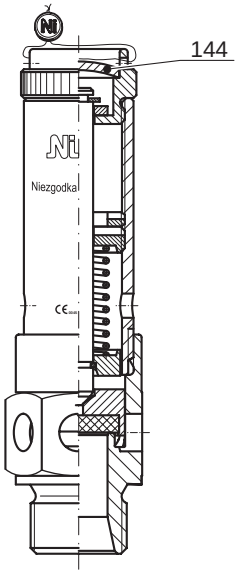
für ungiftige Dämpfe, Gase und Flüssigkeiten, großer Durchsatz
for non-toxic steam, gases and liquids, high capacity

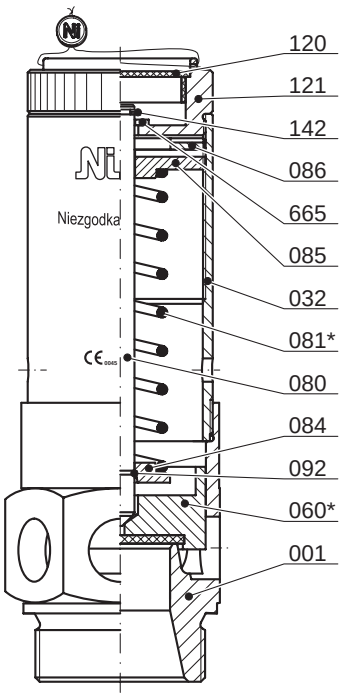
Typ 66

Typ 66.2 : Wst. / Material 1.4571 / 1.4301
Typ 66.3 : Wst. / Material 2.0401 / 2.0401



disc complete, pos. 060*
soft seated





head M, liftable

Item	Description	Material 66.2	Material 66.3	Item	Description	Material 66.2	Material 66.3
001	1 inlet body	1.4571	2.0401	086	1 lock nut	1.4301	2.0401
032	1 bonnet pipe	1.4301[1)]	2.0401	092	1 lock ring	1.4571	1.4571
060*	1 disc, complete			120	1 cap	LD-PE	LD-PE
560*	1 disc	1.4305	2.0401	121	1 lifting cap	1.4305	2.0401
062*	1 soft sealing	see techn. appendix: KWD-1		142	1 stop washer	A2	A2
080	1 spindle	1.4305	1.4305	144	1 lock washer	A2	A2
081*	1 spring	1.4310	1.4310	665	1 washer	A2	A2
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	2.0401				

* expendable parts

1) G2: 1.4541

01'06

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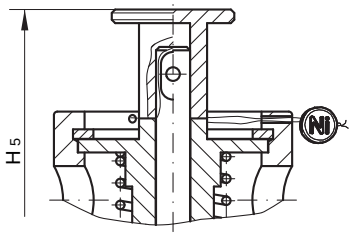
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

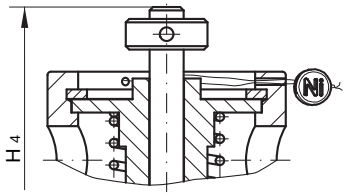
Typ 67

Typ 67.2 : Wst. / Material 1.4404



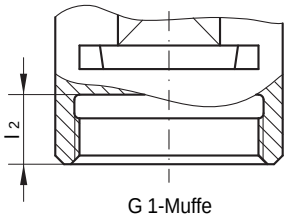
Kopf E, Lüfteknopf
Standard-Anlüftung

head E, lifting button
standard-lifting

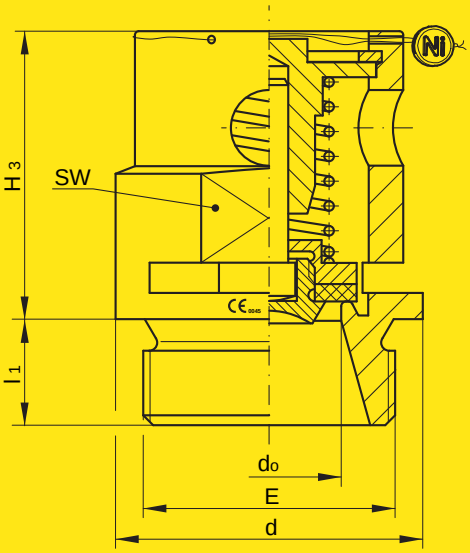


Kopf D, Lüfteknopf
Sonder-Anlüftung

head D, lifting button
special-lifting



G 1-Muffe
G 1-female



Kopf C, Kappe
head C, cap

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-885 • do • D/G • α d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 67.2: -60°C bis / to 150°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Eintritt Inlet				Austritt Outlet	Baumaße Dimensions					Ansprechdruck Set pressure		Gewicht Weight
E	d	l_1	l_2	A	H_3	H_4	H_5	SW	d_o	p min	p max	
G	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
1	39	12	12	frei / free	38	45	54	38	19	0,05	3,0	0,25

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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

Typ 67

Volumenstromtabelle / Discharge capacities

d_o / mm	19		
Medium fluid / p_e [bar(g)]	Luft (0°C) air m_n^3/h	Kohlendioxid (0°C) carbondioxide m_n^3/h	Stickstoff (0°C) nitrogen m_n^3/h
0,05	35,5	28,5	36,2
0,1	42,8	34,5	43,5
0,2	53,3	42,5	54,2
0,3	62,5	49,8	63,7
0,4	71,1	56,5	73,4
0,5	79,2	62,7	80,5
1,0	112	88,5	114
1,5	150	118	152
2,0	183	145	186
2,5	222	176	225
3,0	258	205	263

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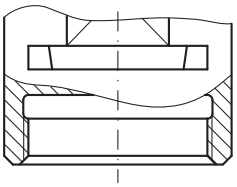
Standard-Safety-Valve, springloaded

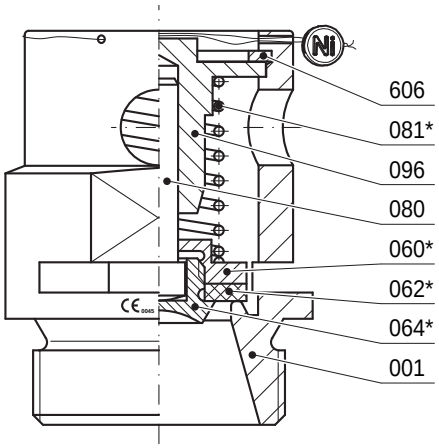
für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

Typ 67

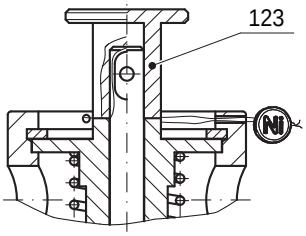
Typ 67.2 : Wst. / Material 1.4404



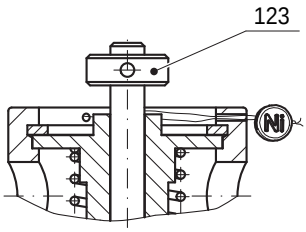
G 1-Muffe
G 1-female



Kopf C, Kappe
head C, cap



Kopf E, Lüfteknopf Standard-Anlüftung
head E, lifting button standard-lifting



Kopf D, Lüfteknopf Sonder-Anlüftung
head D, lifting button special-lifting

Pos.	Bezeichnung	Werkstoff 67.2	Item	Description	Material 67.2
001	1 Eintrittskörper	1.4404	001	1 inlet body	1.4404
060*	1 Kegel komplett	1.4305	060*	1 disc, complete	1.4305
062*	1 Kegeldichtung	siehe tech. Anhang: KWD-1	062*	1 soft sealing	see tech. appendix: KWD-1
064*	1 Kegelschraube	1.4305	064*	1 disc screw	1.4305
080	1 Spindel	1.4305	080	1 spindle	1.4305
081*	1 Feder	1.4310	081*	1 spring	1.4310
096	1 Federführung	1.4305	096	1 spring guide	1.4305
123	1 Lüfteknopf (nur Kopf D, E)	1.4305	123	1 lifting button (only head D, E)	1.4305
606	1 Sicherungsring	A2	606	1 locking ring	A2

* Verschleißteile / expendable parts

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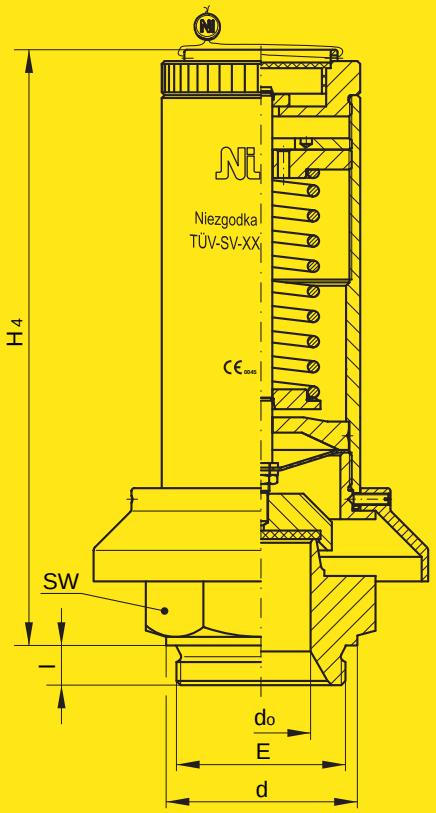
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Fahrzeugbehälter mit flüssigen, körnigen oder staubförmigen Gütern
for container with liquid, granular or dusty goods

Typ 69

Typ 69.2 : Wst. / Material 1.4301, 1.4301
Typ 69.3 : Wst. / Material 2.0401 / 2.0401



Kopf M, anlüftbar
head M, liftable

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-935 • do • F/K/S • α d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 69.2: -60°C bis / to 130°C
Typ 69.3: -10°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

Eintritt Inlet			Austritt Outlet	Baumaße Dimensions			Ansprechdruck Set pressure		Gewicht Weight
E	d	l	A	H4	SW	do	p min	p max	
G	[mm]	[mm]		[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
3/4	32	12		129	41	20	0,5	5,7	1,0
1	39	12		129	41	20	0,5	5,7	1,0
1¼	49	14	frei / free	141	50	25	0,4	4,0	1,6
1½	55	14		184	60	30	0,3	3,0	2,6

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Standard-Safety-Valve, springloaded

für Fahrzeugbehälter mit flüssigen, körnigen oder staubförmigen Gütern
for container with liquid, granular or dusty goods

Typ 69

Volumenstromtabelle / Discharge capacities

Medium fluid	Luft (0°C) air [m^3_n/h]			Stickstoff (0°C) nitrogen [m^3_n/h]		
Eintritt / Inlet	G 3/4, G 1	G 1¼	G 1½	G 3/4, G 1	G 1¼	G 1½
d_o / mm	20	25	30	20	25	30
α_d, max	0,77	0,64	0,72	0,77	0,64	0,72
p_e / [bar(g)]						
0,2						
0,3						
0,4						
0,5	202	237	380	206	241	386
1,0	312	396	590	317	402	601
1,5	410	525	808	417	535	821
2,0	516	666	1083	524	677	1102
2,5	612	793	1287	623	806	1310
3,0	711	923	1496	723	938	1531
3,5	802	1041		815	1057	
4,0	893	1159		908	1181	
4,5	984			999		
5,0	1074			1094		

07

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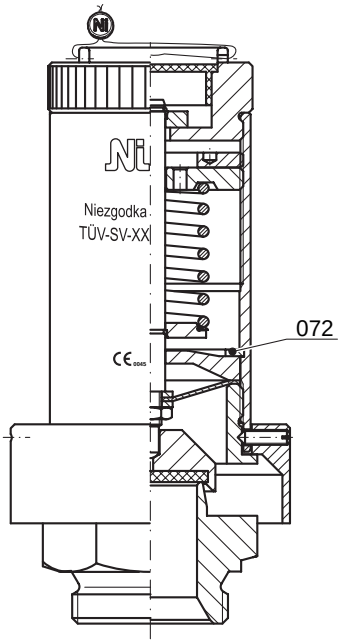
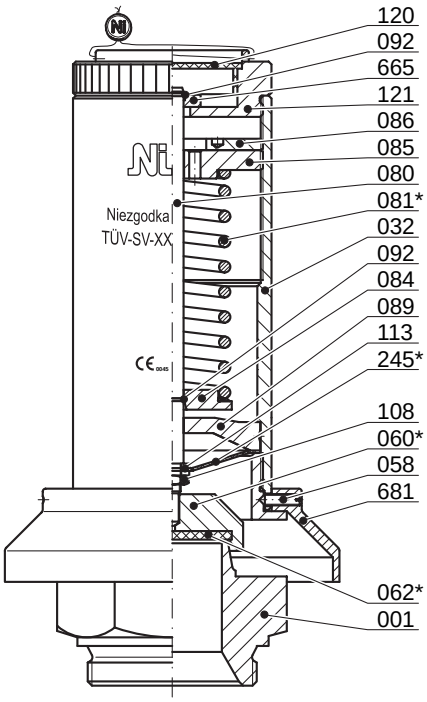
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für Fahrzeugbehälter mit flüssigen, körnigen oder staubförmigen Gütern
for container with liquid, granular or dusty goods

Typ 69

Typ 69.2 : Wst. / Material 1.4301, 1.4301
Typ 69.3 : Wst. / Material 2.0401 / 2.0401





head M, liftable

Item	Description	Material 69.2	Material 69.3	Item	Description	Material 69.2	Material 69.3
001	1 inlet body	1.4301	2.0401	092	2 lock ring	A4	A4
032	1 bonnet pipe	1.4301	2.0401	108	1 nut	A2	A2
058	2 screwed pin	A2	A2	113	2 washer	A2	A2
060*	1 disc, complete	1.4305	2.0401	120	1 cap	PE	PE
062*	1 soft sealing	see techn. appendix: KWD-1		121	1 lifting cap	1.4305	2.0401
072	1 locking ring	A2	A2	245*	1 diaphragm	FPM	FPM
080	1 spindle	1.4305	1.4305	665	1 washer	1.4305	1.4305
081*	1 spring	1.4310	1.4310	681	1 protection	1.4305	2.0401
084	1 springplate, lower	1.4305	1.4305 [1)]				
085	1 adjusting screw	1.4305	2.0401				
086	1 lock nut	1.4305	2.0401				
089	1 guideplate	1.4305	2.0401				

* expendable parts

1) design 1½: 2.0401

04'07

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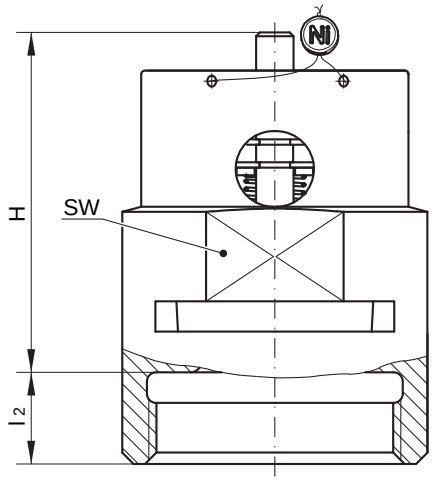
Normal-Sicherheitsventil, mit Unterdruckfunktion
Standard-Safety-Valve, with underpressure function

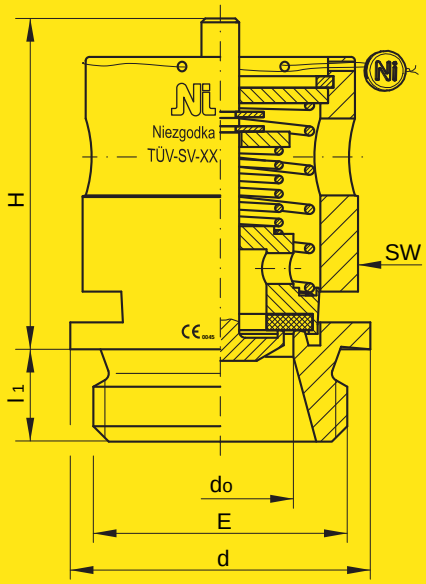
für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

Typ 98

Typ 98.2 : Wst. / Material 1.4404



G1 - Muffe
G1 - female



G1 - Zapfen
G1 - male

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-1066 • do • D/G • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 98.2: -10°C bis / to 150°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Eintritt Inlet				Austritt Outlet	Baumaße Dimensions			Ansprechdruck Set pressure		Gewicht Weight
E	d	l_1	l_2	A	H	SW	do	p Unterdruck p underpressure	p Überdruck p overpressure	
G	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
1	39	12	12	frei / free	45	38	19	-0,05	0,25	0,25
1	39	12	12		45	38	19	-0,03	0,34	0,25

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Normal-Sicherheitsventil, mit Unterdruckfunktion
Standard-Safety-Valve, with underpressure function

für ungiftige Dämpfe und Gase, kleine Drücke
for non-toxic steam and gases, low pressure

Typ 98

Volumenstromtabelle / Discharge capacities

Überdruckfunktion / Overpressure function

Flow dia. d_o / mm	19		
Medium fluid / p_e [bar(g)]	Luft (0°C) air m^3_n/h	Kohlendioxid (0°C) carbondioxide m^3_n/h	Stickstoff (0°C) nitrogen m^3_n/h
0,25	30,6	24,5	31,2
0,34	37,7	30,2	38,4

Unterdruckfunktion / Underverpressure function

Flow dia. d_o / mm	6		
Medium fluid / p_e [bar(g)]	Luft (0°C) air m^3_n/h	Kohlendioxid (0°C) carbondioxide m^3_n/h	Stickstoff (0°C) nitrogen m^3_n/h
-0,05	1,0	0,80	1,02
-0,03	0,8	0,64	0,82

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Standard-Safety-Valve, with underpressure function

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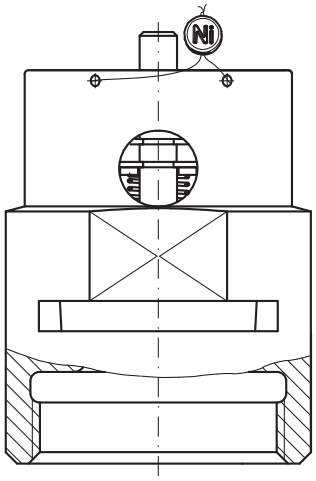
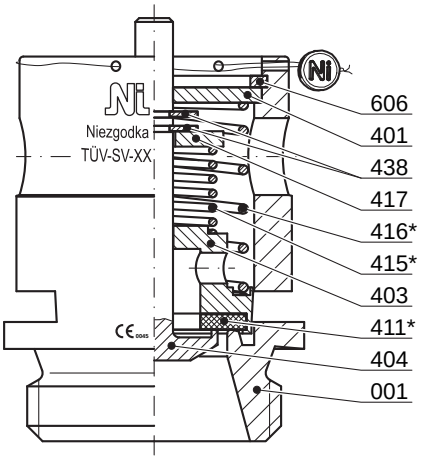
for non-toxic steam and gases, low pressure

Typ 98

Typ 98.2 : Wst. / Material 1.4404



G1 - Muffe
G1 - female



G1 - Zapfen
G1 - male

Pos.	Bezeichnung	Werkstoff 98.2	Item	Description	Material 98.2
001	1 Eintrittskörper	1.4404	001	1 inlet body	1.4404
401	1 Abdeckplatte	1.4305	401	1 plate	1.4305
403	1 Überdruckkegel	1.4404	403	1 overpressure disc	1.4404
404	1 Unterdruckkegel	1.4404	404	1 underpressure disc	1.4404
411*	1 Kegeldichtung	siehe tech. Anhang: KWD-1	411*	1 soft sealing	see tech. appendix: KWD-1
415*	1 Unterdruckfeder	1.4310	415*	1 underpressure spring	1.4310
416*	1 Überdruckfeder	1.4310	416*	1 overpressure spring	1.4310
417	1 Federteller	A2	417	1 spring carrier	A2
438	2 Sicherungsscheibe	A2	438	2 security washer	A2
606	1 Sicherungsring	A2	606	1 locking ring	A2

* Verschleißteile / expendable parts

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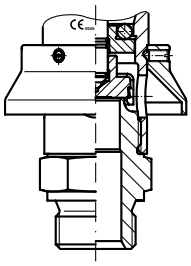
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

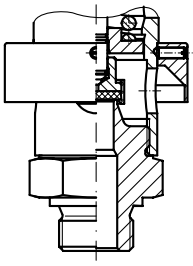
für ungiftige Dämpfe und Gase, anlüftbar
for non-toxic steam and gases, liftable

Typ 110

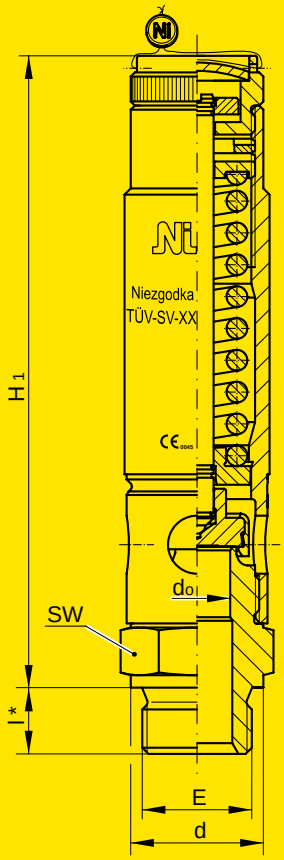
Typ 110.1: Wst. / Material 1.4104 / 2.0401
Typ 110.2: Wst. / Material 1.4571 / 1.4301



BG I mit Strömungsumlenkring /
size I with protection ring
empfohlen bei allen d_o /
recommended at each d_o
für / for
p > 30 bar(g)



BG II mit Strömungsumlenkring /
size II with protection ring
empfohlen bei / recommended at
d_o 12,5; d_o 16: für / for p > 30 bar(g)
d_o 22: für / for p > 10 bar(g)
d_o 27: für / for p > 8 bar(g)



Kopf M, anlüftbar
head M, liftable

Bauteilkennzeichen / TÜV - Approval

BG I: TÜV • SV • XX-1050 • do • D/G • α_d • p
BG II: TÜV • SV • XX-990 • do • D/G • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 110.1: -10°C bis / to 130°C
Typ 110.2: -60°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Eintritt Inlet			Austritt Outlet	Baumaße Dimensions					Ansprechdruck Set pressure		Gewicht Weight
	E	d	l*	A	H_1			SW	d_o	p_{min}	p_{max}	
	G/NPT	[mm]	[mm]	-	[mm]			[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	3/8	22	12	frei / free	153			32	10	0,1	52	0,5
									8	15	84	
	1/2	26	14						12,5	0,1	45	
									10	0,1	52	
									8	15	84	
	3/4	32	16						16	0,05	31	
									12,5	0,1	45	
									10	0,1	52	
									8	15	84	
II	1/2	26	14	frei / free	190			41	12,5	0,09	67	0,8
	3/4	32	16						16	0,06	60	
									12,5	0,09	67	
	1	39	18						16	0,06	60	
									12,5	0,09	67	
	1¼**	49	20					50	27	0,03	25	
									22	0,04	35	
									16	0,06	60	
	1½**	55	22					55	27	0,03	25	1,0
									22	0,04	35	
	2**	60	24					60	27	0,03	25	

* Maß l bei NPT-Ausführung gemäß ANSI B 2.1 / dimension l for NPT-design according to ANSI B 2.1
** NPT auf Anfrage / NPT on request

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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für ungiftige Dämpfe und Gase, anlüftbar
for non-toxic steam and gases, liftable

Typ 110

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I				II					
d_O / mm	8,0	10	12,5	16	12,5	16	22 [1)]	22 [2)]	27 [1)]	27 [2)]
α_d, max	0,46	0,29	0,12	0,13	0,50	0,38	0,22	0,16	0,20	0,15
p_e / [bar(g)]										
0,05				12,1		29,6	27,0		40,6	
0,1		11,4	6,9	14,3	27,0	34,8	31,9		48,1	
0,2		14,3	9,0	17,7	33,4	43,2	41,1		61,8	
0,3		17,0	10,6	20,8	40,1	50,6	49,9		75,1	
0,4		19,3	12,1	23,3	45,9	57,8	57,4		86,5	
0,5		21,5	13,4	25,9	51,4	64,8	64,4		97,0	
1,0		30,7	19,4	36,2	77,7	98,4	96,0		144,6	
1,5		40,2	25,6	46,7	102,4	127,7	127,8		192,5	
2,0		49,3	31,4	56,8	128,9	160,7	159,9		240,9	
2,5		58,2	37,5	66,8	157,3	192,3	191,0		287,6	
3,0		67,0	43,3	76,8	180,4	224,6	223,5		336,6	
3,5		75,5	48,8	86,6	203,4	253,3	252,0		379,6	
4,0		84,1	54,3	96,5	226,4	282,0	280,6		422,6	
4,5		92,6	59,9	106,3	249,5	310,7	309,1		465,6	
5		101,2	65,4	116,1	272,5	339,4	337,7		508,6	
6		118,3	76,5	135,8	318,7	396,8	394,8		594,7	
7		135,4	87,6	155,4	364,8	454,3	452,0		680,9	
8		152,6	98,7	175,1	411,0	511,8	509,3		767,1	767,1
9		169,7	109,7	194,8	457,3	569,4	556,6		853,3	853,3
10		186,9	120,8	214,5	503,5	627,0	623,9	686,2	939,7	939,7
12		221,3	143,1	253,9	596,1	742,3	738,6	812,5	1112,5	812,1
14		255,7	165,3	293,4	688,8	857,7	853,5	938,8	1285,5	938,4
15	277,0	272,9	176,5	313,2	735,2	915,5	911,0	1002,0	1372,1	1001,6
16	294,6	290,2	187,6	333,0	781,7	973,3	968,5	1065,4	1458,8	1064,9
18	329,6	324,7	209,9	372,6	874,6	1089,1	1083,7	1192,1	1632,3	1191,6
20	364,7	359,2	232,3	412,2	967,7	1205,0	1199,0	1318,9	1806,0	1318,4
25	452,6	445,8	288,2	511,6	1201,0	1495,4	1488,0	1116,0	2241,3	1636,1
30	540,8	532,7	344,4	611,3	1435,0	1786,8	1778,0	1333,5		
35	629,2	619,8	400,8		1669,8	2079,2	2069,0	1551,7		
40	718,0	707,3	457,3		1905,4	2372,6				
45	807,1	795,0	514,0		2141,8	2666,9				
50	896,5	883,1			2379,0	2962,3				
60	1076,1				2855,7	3555,9				
70	1257,0									
80	1439,2									

[1)] ohne Strömungsumlenkring Pos. 681 / with protection ring pos. 681
[2)] mit Strömungsumlenkring Pos. 681 / without protection ring pos. 681
Alle anderen Werte gelten mit und ohne Strömungsumlenkring. / Other values are valid with and without protection ring.

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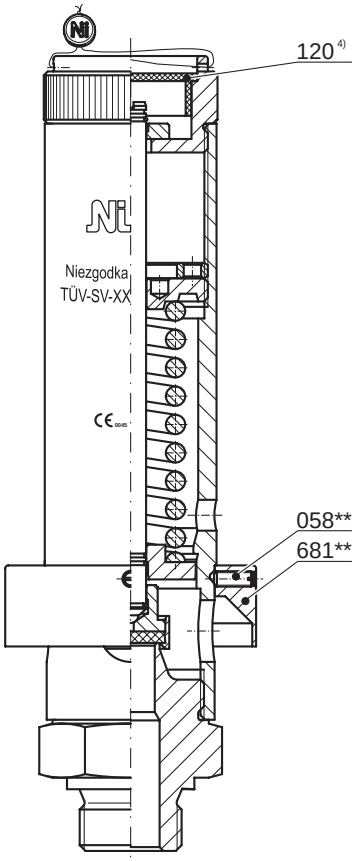
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

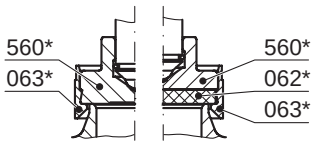
für ungiftige Dämpfe und Gase, anlüftbar
for non-toxic steam and gases, liftable

Typ 110

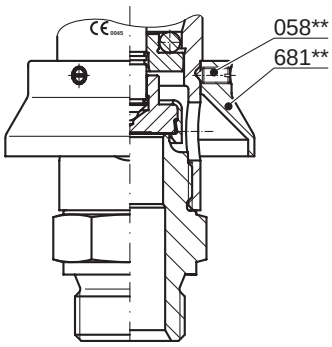
Typ 110.1: Wst. / Material 1.4104 / 2.0401
Typ 110.2: Wst. / Material 1.4571 / 1.4301



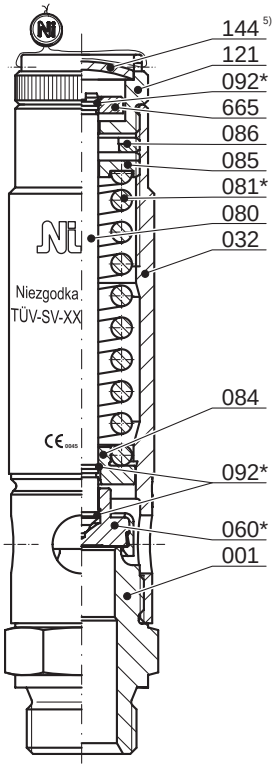
BG II mit Strömungsumlenkring /
size II with protection ring



Kegel komplett, Pos. 060*
metall. dichtend weich dichtend
disc complete, pos. 060*
metal seated soft seated



BG I mit Strömungsumlenkring /
size I with protection ring



Kopf M BG I, anlüftbar
head M size I, liftable

Pos.	Bezeichnung	Werkstoff 110.1	Werkstoff 110.2	Item	Description	Material 110.1	Material 110.2
001	1 Eintrittskörper	1.4104	1.4571	001	1 inlet body	1.4104	1.4571
032	1 Haubenrohr	2.0401	1.4301	032	1 bonnet pipe	2.0401	1.4301
060*	1 Kegel komplett			060*	1 disc, complete		
560*	1 Kegel, Rohling	1.4571 1)	1.4571	560*	1 disc	1.4571 1)	1.4571
062*	1 Kegeldichtung	siehe techn. Anhang: KWD-1		062*	1 soft sealing	see techn. appendix: KWD-1	
063*	1 Kegelring	1.4571	1.4571	063*	1 disc screw	1.4571	1.4571
080	1 Spindel	1.4305	1.4305	080	1 spindle	1.4305	1.4305
081*	1 Feder	1.4310	1.4310	081*	1 spring	1.4310	1.4310
084	1 Federteller, unten	1.4104 3)	1.4571	084	1 springplate, lower	1.4104 3)	1.4571
085	1 Druckschraube	2.0401	1.4305	085	1 adjusting screw	2.0401	1.4305
086	1 Gegenmutter	2.0401	1.4305	086	1 lock nut	2.0401	1.4305
092	3 Sprengring	1.4571	1.4571	092	3 lock ring	1.4571	1.4571
120 4)	1 Kappe	LD-PE	LD-PE	120 4)	1 cap	LD-PE	LD-PE
121	1 Lüftekappe	2.0401	1.4305	121	1 lifting cap	2.0401	1.4305
144 5)	1 Verschlussscheibe	A2	A2	144 5)	1 lock washer	A2	A2
665	1 Scheibe	1.4305	1.4305	665	1 washer	1.4305	1.4305
	auf Anfrage				on request		
058**	3 Gewindestift	A4	A4	058**	3 screwed pin	A4	A4
681**	1 Strömungsumlenkring	2.0401	1.4305	681**	1 protection ring	2.0401	1.4305

* Verschleißteile / expendable parts
** Option, auf Anfrage / optional design, on request
1) BG I, weich dichtende Ausf.: 1.4104 / size I, soft sealing design: 1.4104
3) BG II: 1.4571 / size II: 1.4571
4) nur BG II / only size II
5) nur BG I / only size I

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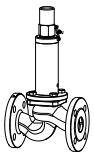
Flansch- Sicherheits- / Flansch- Entlastungsventile, div. Bauformen
Flange Safety- / Flange Relief-Valves, var. constructions



Inhaltsverzeichnis
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Ventil Valve	Verwendung Use	Medium	*	DN_E	PN_E bar	Köpfe Heads
Typ 7	Normal-Sicherheitsventil, federbelastet Standard-Safety-Valve, springloaded für ungiftige Dämpfe und Gase, freiabblasend for non-toxic steam and gases, open discharge mit Flanschanschluss / with flanged inlet	D/G	B	50 - 125	16	A, C
Typ 7	Entlastungs-(Überström)-Ventil, federbelastet Relief-(Overflow)-Valve, springloaded für ungiftige Dämpfe und Gase, freiabblasend for non-toxic steam and gases, open discharge mit Flanschanschluss / with flanged inlet	D/G	-	150 - 350	10 - 16	A, C
Typ 13	Entlastungs- (Überström)-Ventil, federbelastet Relief- (Overflow)-Valve, springloaded mit geschlossener Federhaube / in closed completion	D/G/F	-	15 - 150	16 - 40	A - H
Typ 22	Entlastungsventil, federbelastet Relief-Valve, springloaded mit geschlossener Federhaube, für hohe Drücke in closed completion, high pressure	D/G/F	-	** - 1	- 1100	A, C

Medium
- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

* Bauteilgeprüft / TÜV-Approval..... - B -
** Flanschabmessungen sind variabel / flangedimension are variable

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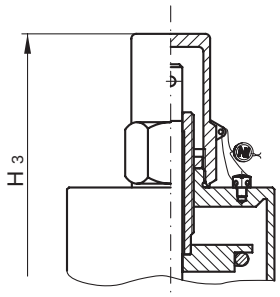
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

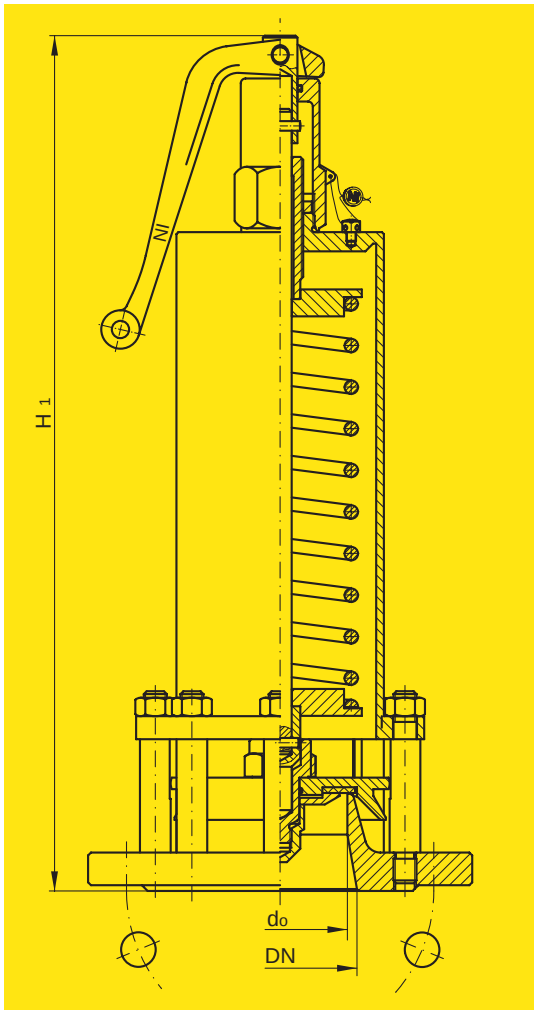
für ungiftige Dämpfe und Gase
for non-toxic steam and gases

Typ 7

Typ 7.1 : Wst. / Material 1.0037 / 1.0254
Typ 7.2 : Wst. / Material 1.4541 / 1.4301



Kopf C / head C



Kopf A / head A

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-725 • do • D/G • α_d • p

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 7.1: -10°C bis / to 130°C
Typ 7.2: -60°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

Eintritt / Inlet				Austritt Outlet	Baumaße Dimensions		Ansprechdruck Set pressure		Gewicht Weight
DN		PN	do		H1	H3	p min	p max	
DIN	ANSI								
[mm]	[mm]	[bar(g)]	[mm]	-	[mm]	[mm]	[mm]	[mm]	[kg]
50	auf Anfrage on request	16	40	frei / free	405	395	0,10	3,8	8,3
65			50		405	395	0,10	3,0	9,6
80			70		470	460	0,05	1,2	12,5
100			90		480	470	0,05	1,0	15,5
125			110		680	640	0,05	1,4	33,0

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Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

für ungiftige Dämpfe und Gase
for non-toxic steam and gases

Typ 7

Volumenstromtabelle / Discharge capacities

Luft bei 0°C und mbar [m^3_n/h] / air at 32°F and 1013 mbar [m^3_n/h]

Eintr. / Inlet	DN 50	DN 65	DN 80	DN 100	DN 125
d_o / mm	40	50	70	90	110
α_d, max	0,63	0,64	0,59	0,63	0,68
p_e / [bar(g)]					
0,05			521	941	1610
0,10	241	376	744	1390	2290
0,20	358	554	1080	2090	3290
0,30	457	702	1370	2640	4100
0,40	547	836	1650	3090	4810
0,50	631	961	1930	3460	5470
0,60	710	1080	2210	3800	6080
0,70	785	1190	2480	4130	6670
0,80	856	1300	2730	4510	7240
0,90	924	1400	2960	4970	7790
1,00	989	1500	3170	5590	8340
1,50	1300	2010			
2,00	1600	2510			
2,50	1860	3000			
3,00	2130	3490			

901'06

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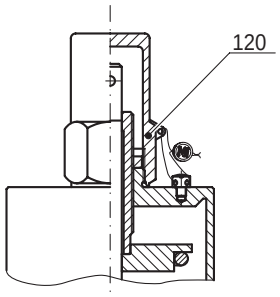
Normal-Sicherheitsventil, federbelastet
Standard-Safety-Valve, springloaded

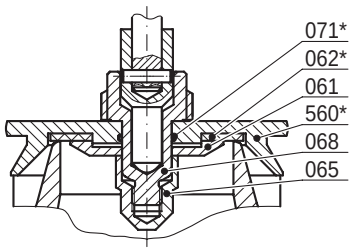
für ungiftige Dämpfe und Gase
for non-toxic steam and gases

Typ 7

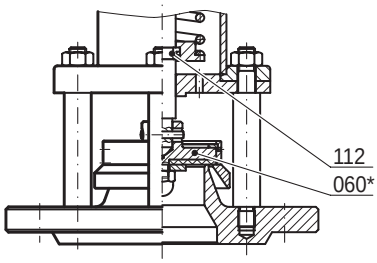
Typ 7.1 : Wst. / Material 1.0037 / 1.0254
Typ 7.2 : Wst. / Material 1.4541 / 1.4301



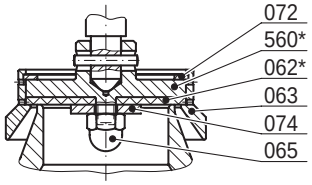
head C



disc complete, pos. 060*
DN 80, 100, 125
soft seated

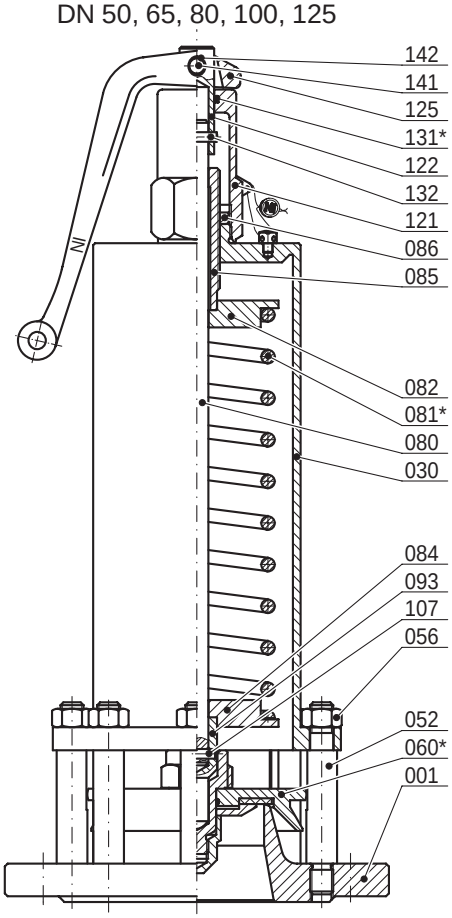


DN 50, 65



disc complete, pos. 060*
DN 50, 60 soft seated

DN 50, 65, 80, 100, 125



DN 80, 100, 125
head A, with lifting lever

Item	Description	Material 7.1	Material 7.2
001	1 inlet body	1.0037 [1]	1.4541
030	1 spring bonnet	1.0254	1.4301
052 [4]	8 column	1.4305	1.4305
056 [4]	8 nut	A2	A2
060*	1 disc, complete		
560*	1 disc	1.0460	1.4301
061	1 pressure piece	1.0460	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1	
063	1 disc ring	1.0460	1.4301
065	1 disc bolt	1.4305	1.4305
068	1 disc guidance	1.4305	1.4571
071*	1 o-ring	NBR	FPM
072	1 locking ring	1.0460	1.4305
074	1 disc plate	1.4305	1.4571
080	1 spindle	1.4104	1.4571
081*	1 spring	1.4310	1.4310

Item	Description	Material 7.1	Material 7.2
082	1 springplate, upper	1.0718	1.4305
084	1 springplate, lower	1.0718	1.4305
085	1 adjusting screw	1.4305	1.4305
086	1 lock nut	1.4305	1.4305
093	1 joining piece	1.4305	1.4305
107	1 spring pin	A2	A2
112	1 split ring	1.4305	1.4305
120	1 cap (only head C)	1.0718 [2]	1.4305
121	1 lifting cap	1.0718 [2]	1.4305
122	1 coupling	1.4305	1.4305
125	1 lifting lever (only head A)	3.2581 [3]	3.2581 [3]
131*	1 o-ring	NBR	FPM
132	1 groove pin	A2	A2
141	1 bolt	1.4305	1.4305
142	2 stop washer	A2	A2

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* expendable parts

[1] seat: 1.4541

[2]

[3] DN 125 = 1.0037

[4]

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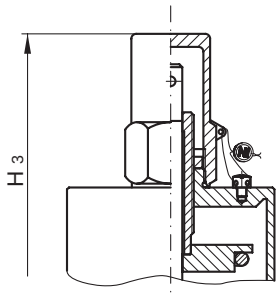
Entlastungsventil, federbelastet
Relief-Valve, springloaded

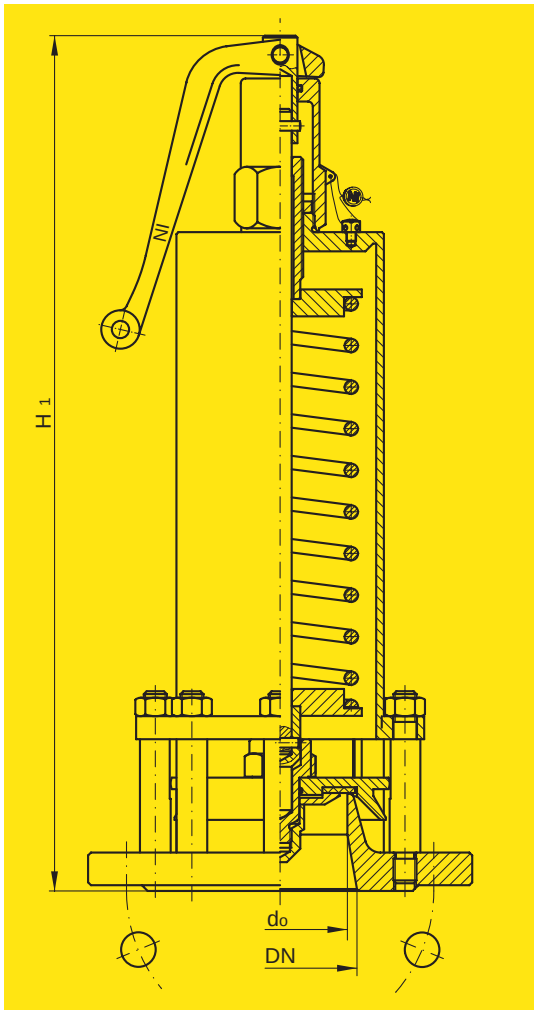
für ungiftige Dämpfe und Gase
for non-toxic steam and gases

Typ 7

Typ 7.1 : Wst. / Material 1.0037 / 1.0254
Typ 7.2 : Wst. / Material 1.4541 / 1.4301



Kopf C / head C



Kopf A / head A

Verwendung / Use

Betriebstemperatur / operating temperature
Typ 7.1: -10°C bis / to 130°C
Typ 7.2: -60°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

Eintritt / Inlet				Austritt Outlet	Baumaße Dimensions		Ansprechdruck Set pressure		Gewicht Weight
DN		PN	do		H1	H3	p min	p max	
DIN	ANSI								
[mm]	[mm]	[bar(g)]	[mm]	-	[mm]	[mm]	[mm]	[mm]	[kg]
150	auf Anfrage on request	16	130	frei / free	830	810	0,40	0,60	36,0
200		16	175		865	845	0,45	0,55	
250		10	220		900	820	0,45	0,55	75,0
300		10	270		980	960	0,45	0,55	
350		10	320		990	970	0,43	0,88	

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for non-toxic steam and gases

Typ 7

Volumenstromtabelle / Discharge capacities

Luft bei 0°C und mbar [m ^3_n/h] / air at 32°F and 1013 mbar [m ^3_n/h]

Eintr. / Inlet	DN 150	DN 200	DN 250	DN 300	DN 350
d_o / mm	130	175	220	270	320
α_d, max	-	-	-	-	-
p_e / [bar(g)]					
0,05					
0,10					
0,20					
0,30					
0,40					
0,50					
0,60					
0,70					
0,80					
0,90					
1,00					
1,50					
2,00					
2,50					
3,00					

Auf Anfrage / on request

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für ungiftige Dämpfe und Gase
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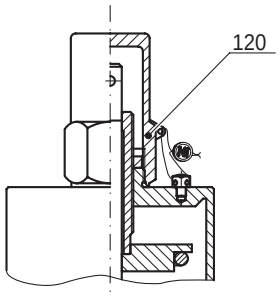
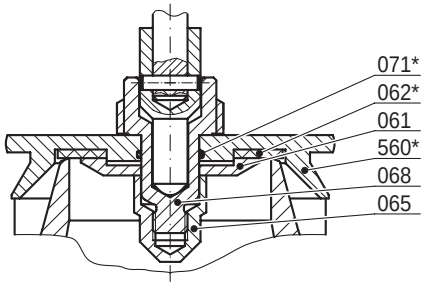
Typ 7

Typ 7.1 : Wst. / Material 1.0037 / 1.0254
Typ 7.2 : Wst. / Material 1.4541 / 1.4301

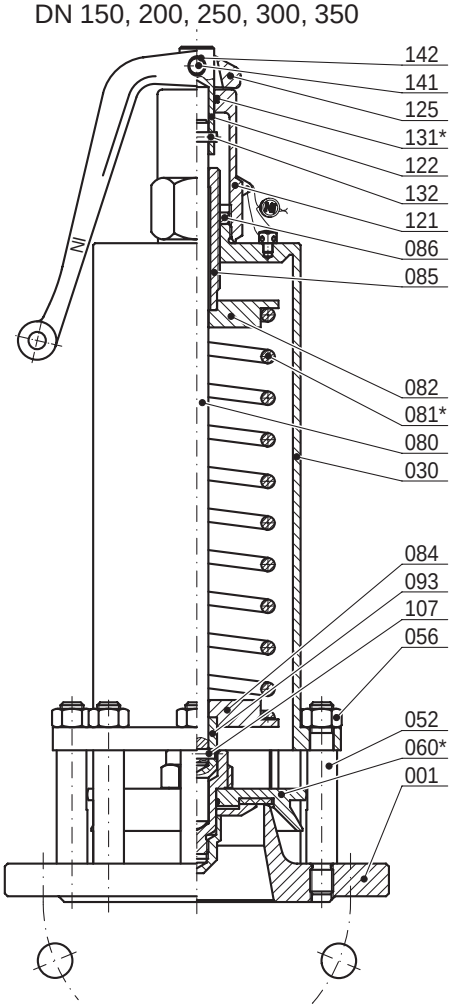
DN 150, 200, 250, 300, 350



head C



disc complete, pos. 060*
soft seated



head A, with lifting lever

Item	Description	Material 7.1	Material 7.2
001	1 inlet body	1.0037 [1)]	1.4541
030	1 spring bonnet	1.0254	1.4301
052	8 column	1.4305	1.4305
056	8 nut	A2	A2
060*	1 disc, complete		
560*	1 disc	1.0460	1.4301
061	1 pressure piece	1.0460	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1	
065	1 disc bolt	1.4305	1.4305
068	1 disc guidance	1.4305	1.4571
071*	1 o-ring	NBR	FPM
080	1 spindle	1.4104	1.4571
081*	1 spring	1.4310	1.4310
082	1 springplate, upper	1.0718	1.4305
084	1 springplate, lower	1.0718	1.4305
085	1 adjusting screw	1.4305	1.4305

Item	Description	Material 7.1	Material 7.2
086	1 lock nut	1.4305	1.4305
093	1 joining piece	1.4305	1.4305
107	1 spring pin	A2	A2
120	1 cap (only head C)	1.0254	1.4305
121	1 lifting cap	1.0254	1.4305
122	1 coupling	1.4305	1.4305
125	1 lifting lever (only head A)	1.0037	1.4301
131*	1 o-ring	NBR	FPM
132	1 groove pin	A2	A2
141	1 bolt	1.4305	1.4305
142	2 stop washer	A2	A2

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* expendable parts

[1)] seat: 1.4541

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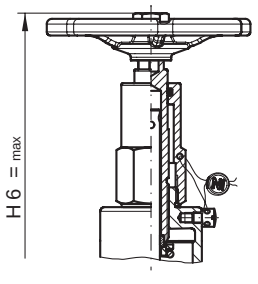
Entlastungsventil, federbelastet
Relief-Valve, springloaded

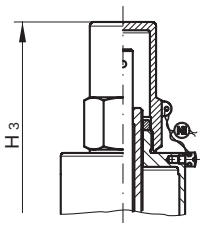
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 13

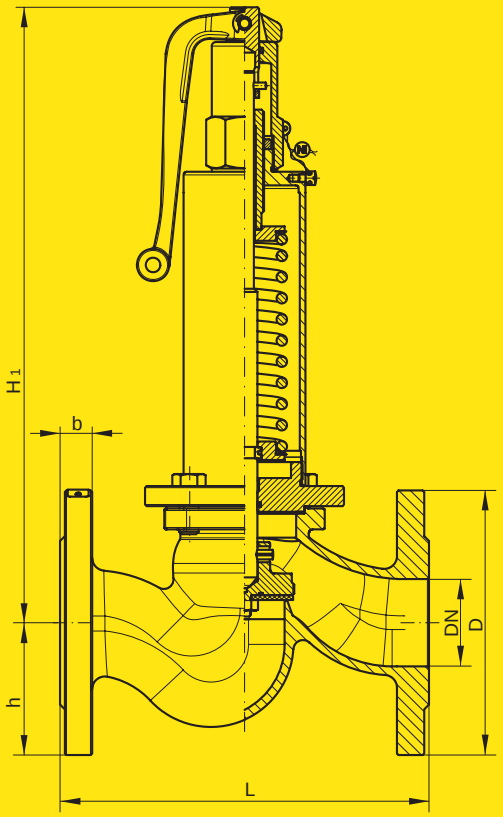
Typ 13.1 : Wst. / Material 1.0619, 0.7043
Typ 13.2 : Wst. / Material 1.4581



Kopf F
gasdicht mit Handrad
als Druckhalteventil regelbar
head F
gastight with handwheel
as pressure contralvalve



Kopf C / head C
gasdichte Kappe
gastight cap



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Verwendung / Use

Betriebstemperatur / operating temperature

Typ 13.1: -10°C bis / to 280°C / 350°C
Typ 13.2: -60°C bis / to 350°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: waagerecht
Installation position: horizontal

BG Size	Eintritt / Austritt Inlet / Outlet		Baumaße Dimensions								Ansprechdruck [1] Set pressure		Gewicht Weight
	DN E/A	PN	D	PN16	b	PN40	L	h	H1	H3	H6	p min	p max	
	[mm]	[bar(g)]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	15		95	14		16	130	47,5	250	235	275			4,0
	20		105	16		18	150	52,5	260	245	285		30	4,0
	25		115	16		18	160	57,5	285	270	310			5,5
II	32		140	16		18	180	70,0	360	340	410		25	9,8
	40		150	16		18	200	75,0	365	345	415			10,3
III	50	16	165	18		20	230	82,5	370	350	420	0,5	16	13,2
	65	40	185	18		22	290	92,5	380	360	430			17,5
IV	80		200	20		24	310	100,0	620	540	680		10	32,3
	100		220/235	20		24	350	110,0	630	550	690			42,7
V	125		250/270	22		26	400	125,0	645	565	705		8	67,0
	150		285/300	22		28	480	142,5	-*	-*	-*		-*	103,0

* auf Anfrage / on request

1) andere Drücke auf Anfrage / other pressures on request

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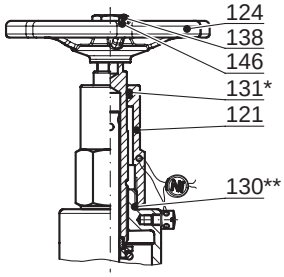
Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

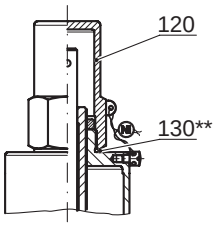
Typ 13

Typ 13.1 : Wst. / Material 1.0619, 0.7043
Typ 13.2 : Wst. / Material 1.4581

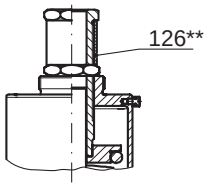
size I DN 15, 20, 25
size II DN 32, 40
size III DN 50, 65



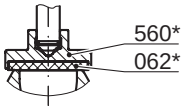
head F
gastight with handwheel
as pressure contralvalve



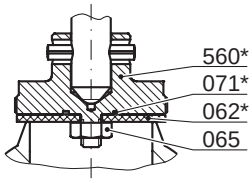
head C
gastight cap



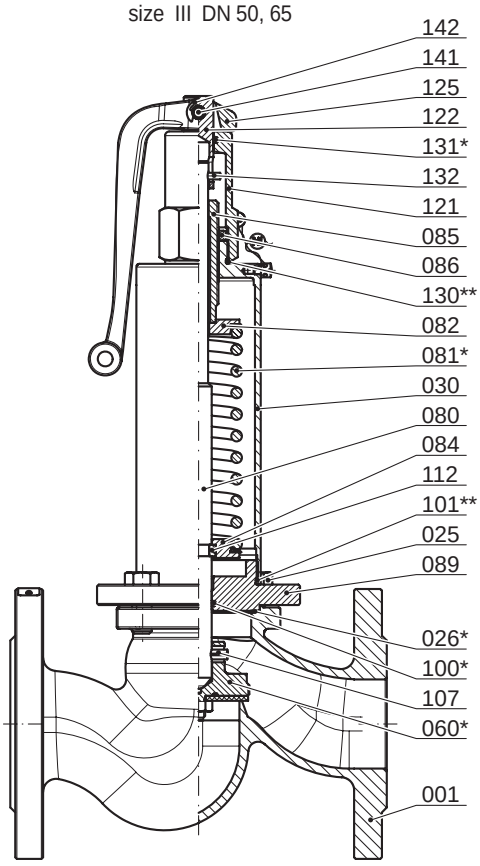
lock sleeve
on request



disc complete, pos. 060*
size I



disc complete, pos. 060*
size II-III



head A
gastight with lifting lever

Item	Description	Material 13.1	Material 13.2	Item	Description	Material 13.1	Material 13.2
001	1 inlet body	0.7043	1.4581	107	1 spring pin	A2	A2
025"	4/8 screw	A2	A2	112	1 split ring	1.4305	1.4305
026*	1 packing ring	TESNIT	BAU	120	1 cap (only head C)	1.0718	1.4581
030	1 spring bonnet	1.0254	1.4301	121	1 lifting cap (only head A)	1.4104	1.4581
060*	1 disc, complete			122	1 coupling	1.4305	1.4305
560*	1 disc	1.4571	1.4571	124	1 handwheel (only head F)	3.2581	3.2581
062*	1 soft sealing	see techn. appendix: KWD-1		125	1 lifting lever	3.2581	3.2581 4)
065	1 disc bolt	A4	A4	126**	1 lock sleeve	1.4305	1.4305
071*	1 o-ring	A4	A4	130**	1 o-ring	NBR	FPM
080	1 spindel	1.4104	1.4571	131*	1 o-ring	NBR	FPM
081*	1 spring	1.4310	1.4310	132	1 groove pin	A4	A4
082	1 springplate, upper	1.0718	1.4305	133	1 groove pin (only size I)	A4	A4
084	1 springplate, lower	1.0718 2)	1.4571	138	1 screw	A2	A2
085	1 adjusting screw	1.4305 3)	1.4305	141	1 bolt	1.4305	1.4305
086	1 lock nut	1.4305	1.4305	142	2 stop washer	A2	A2
089	1 guide plate	1.0460	1.4571	146	1 washer	A2	A2
092*	2 lock ring (only size I)	1.4571	1.4571				
100*	1 o-ring	NBR	FPM				
101**	1 o-ring	NBR	FPM				

* expendable parts
" size I: 4 screw
1) design II: 1.0619
3) size I: 1.4104

II_engl 0906

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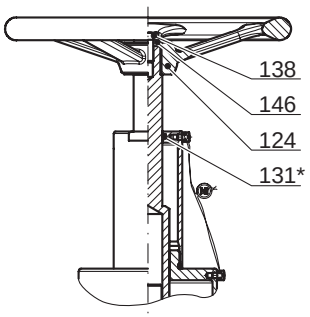
Entlastungsventil, federbelastet
Relief-Valve, springloaded

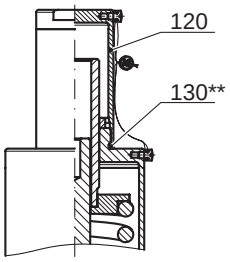
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube
for steam, gases and liquids in closed completion

Typ 13

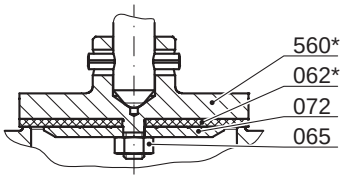
Typ 13.1 : Wst. / Material 1.0619, 0.7043
Typ 13.2 : Wst. / Material 1.4581



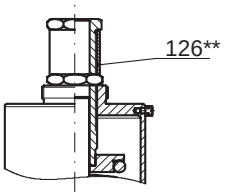
head F
gastight with handwheel
as pressure contralvalve



head C
gastight cap

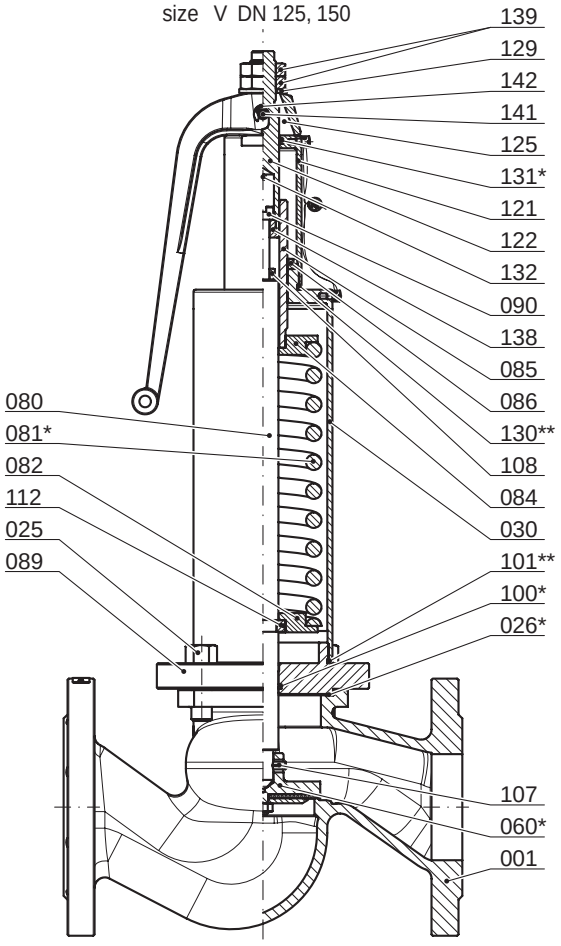


disc complete, pos. 060*



lock sleeve
on request

size IV DN 80, 100
size V DN 125, 150



head A
gastight with lifting lever

Item	Description	Material 13.1	Material 13.2	Item	Description	Material 13.1	Material 13.2
001	1 inlet body	0.7043	1.4581	107	1 spring pin	A2	A2
025"	4/8 screw	A2	A2	108	1 nut	A2	A2
026*	1 packing ring	TESNIT	BAU	112	1 split ring	1.4305	1.4305
030	1 spring bonnet	1.0254	1.4301	120	1 cap (only head C)	1.0254	1.4571
060*	1 disc, complete			121	1 lifting cap (only head A)	1.0254	1.4571
560*	1 disc	1.4571	1.4571	122	1 coupling	1.4305	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1		124	1 handwheel (only head F)	3.2581	3.2581 [2)]
065	1 disc bolt	A4	A4	125	1 lifting lever	3.2581	3.2581
072	1 locking ring	1.4571	1.4571	126**	1 lock sleeve	1.4305	1.4305
080	1 spindel	1.4104	1.4571	129	1 pressure plate	A2	A2
081*	1 spring	1.4310	1.4310	130**	1 o-ring	NBR	FPM
082	1 springplate, upper	1.0718	1.4305	131*	1 o-ring	NBR	FPM
084	1 springplate, lower	1.0718	1.4571	132	1 groove pin	A4	A4
085	1 adjusting screw	1.4305	1.4305	138	1 screw	A2	A2
086	1 lock nut	1.4305	1.4305	139	2 nut	A2	A2
089	1 guide plate	1.0460	1.4571	141	1 bolt	1.4305	1.4305
090	1 screw	A4	A4	142	2 stop washer	A2	A2
100*	1 o-ring	NBR	FPM	146	1 washer	A2	A2
101**	1 o-ring	NBR	FPM				

-V_engl 09'06

* expendable parts

" size IV: 4/8 screw

1) design II: 1.0619

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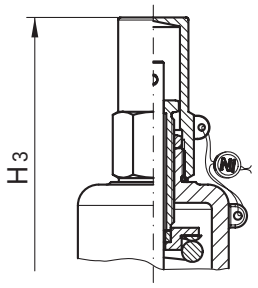
Entlastungsventil, federbelastet
Relief-Valve, springloaded

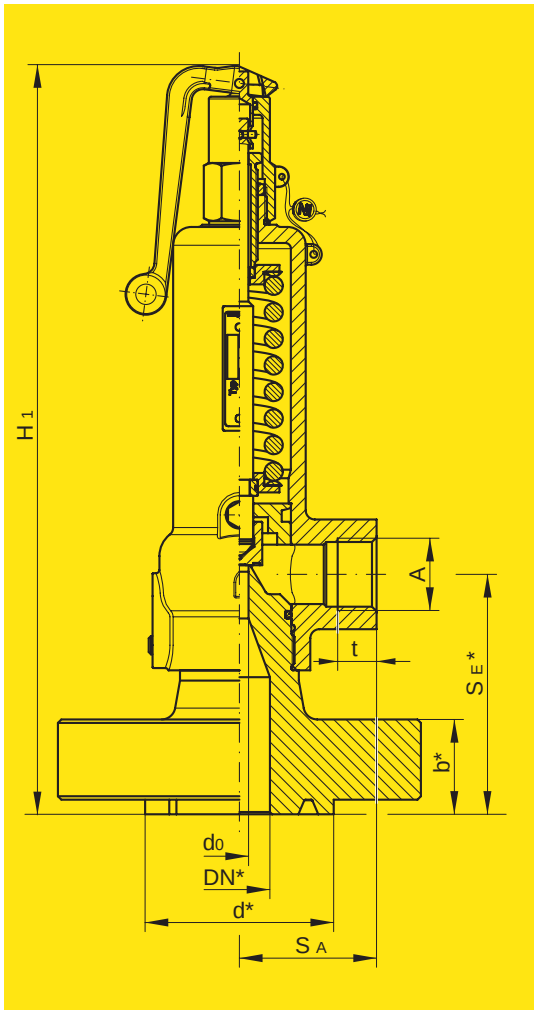
für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube, hohe Drücke
for steam, gases and liquids in closed completion, high pressure

Typ 22

Typ 22.2 : Wst. / Material 1.4571 / 1.4581



Kopf C / head C
gasdichte Kappe
gastight cap



Kopf A, gasdicht mit Lüftehebel
head A, gastight with lifting lever

Bauteilkennzeichen / TÜV - Approval

TÜV • SV • XX-1036 • 12,5 • F • 014 • 250

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel metallisch dichtend / disc metal seated

Typ 22.2: -60°C bis / to 350°C / (400°C[1)])

Einbaulage: senkrecht
Installation position: vertical

Eintritt Inlet				Austritt Outlet			Baumaße Dimensions			Ansprechdruck Set pressure		Gewicht Weight
DN_E* [mm] NPS	S_E*	b*	d*	A	S_A	t	H_1	H_3	d_o	p_{min}	p_{max}	
	[mm]	[mm]	[mm]	G/NPT	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
Flanschabmessungen sind variabel / flangedimension are variable				1	60	18	327	314	6 8 12,5	600 250 100	1100 600 250	
25 [2)] 1 [2)]	100 105	-	-	1	60	18	327	314	12,5	-	250	

* Flanschabmessungen sind variabel / flangedimension are variable
1) höhere Temperaturen auf Anfrage / higher temperatures on request
2) TÜV-Bauteil geprüfte Ausführung / TÜV-approval Safety valve

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Entlastungsventil, federbelastet
Relief-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten mit geschlossener Haube, hohe Drücke
for steam, gases and liquids in closed completion, high pressure

Typ 22

Massen - bzw. Volumenstromtabelle / Discharge capacities

d_o [mm]	6			8			12,5		
Medium / fluid	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]	Wasser water 20°C [kg/h]	Satt-dampf steam [kg/h]	Luft air 0°C [m^3_n/h]
p_e [bar(g)]									
100	1400	240	280	2500	440	500	6200	1000	1200
120	1600	300	330	2800	540	600	6800	1300	1400
140	1700	360	390	3000	650	700	7400	1600	1700
160	1800	430	440	3200	770	800	7900	1900	1900
180	1900	510	500	3400	910	890	8300	2200	2200
200	2000	610	560	3600	1100	990	8800	2600	2400
230	2200		640	3900		1100	9400		2800
260	2300		720	4100		1300			
290	2400		810	4300		1400			
320	2500		890	4500		1600			
360	2700		1000	4800		1800			
400	2900		1100	5100		2000			
440	3000		1200	5300		2200			
480	3100		1300	5600		2400			
520	3300		1400	5800		2600			
560	3400		1500	6000		2800			
600	3500		1700	6200		3000			
650	3600		1800						
700	3800		1900						
750	3900		2100						
800	4000		2200						
850	4200		2300						
900	4300		2500						
950	4400		2600						
1000	4500		2800						
1050	4600		2900						
1100	4700		3000						

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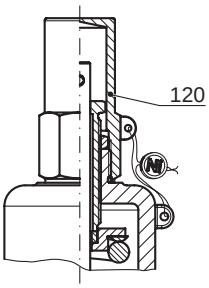
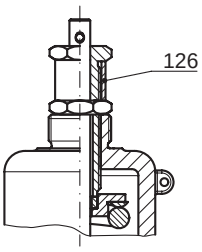
for steam, gases and liquids in closed completion, high pressure

Typ 22

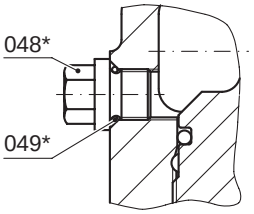
Typ 22.2 : Wst. / Material 1.4571 / 1.4581



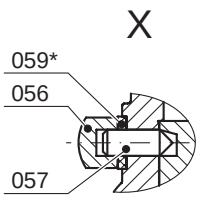
head C
gastight cap



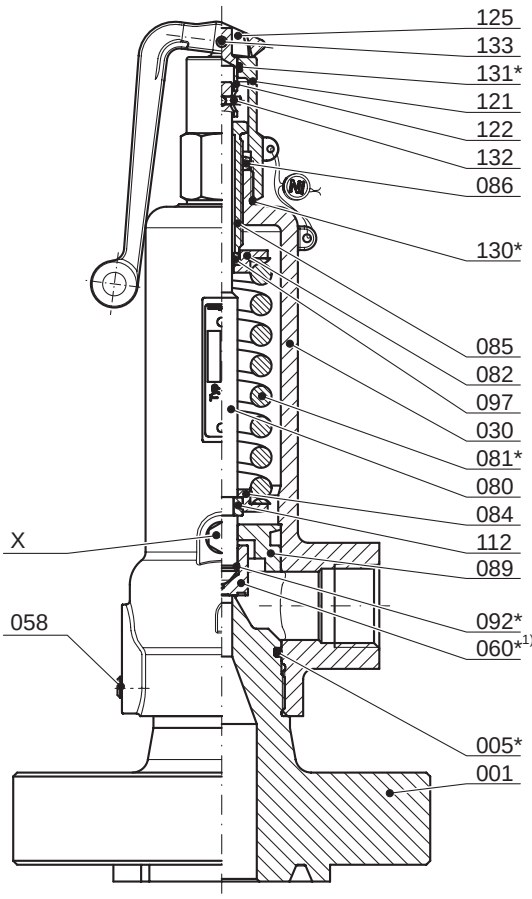
lock sleeve
on request



drainage screw
on request



90° ↻



head A
gastight with lifting lever

Item	Description	Material	Item	Description	Material
001	1 inlet body	1.4571	089	1 guide plate	1.4571
005*	1 o-ring	FPM	092*	2 lock ring	1.4571
030	1 spring bonnet	1.4581	097	1 glide ring	1.4305
048*	1 drainage screw	A4	112	1 split ring	1.4305
049*	1 packing ring	PTFE	120	1 cape (only head C)	1.4571
056	2 lock nut	A2	121	1 lifting cape (only head A)	1.4571
057	2 screwed pin	A2	122	1 coupling	1.4305
058	1 screwed pin	A2	125	1 lifting lever	3.2581
059*	2 packing ring	PTFE	126	1 lock sleeve	1.4305
060* 1)	1 disc, complete	1.4571 / Stellite	130*	1 o-ring	FPM
080	1 spring	1.4571	131*	1 o-ring	FPM
081*	1 Feder	1.4310	132	1 groove pin	A 4
082	1 springplate, upper	1.4305	133	1 groove pin	A 4
084	1 springplate, lower	1.4305			
085	1 adjusting screw	1.4571			
086	1 lock nut	1.4305			

* expendable parts

1) stellited

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Druckminderventil, Industrie - Ausführung
Pressure-Reducing-Valve, Industry - design

8

Inhaltsverzeichnis
Index

Ventil Valve	Verwendung Use	Medium	DN mm	$P_{1\ max}$ bar	P_2 bar
Typ 70	Druckminderventil, federbelastet Pressure Reducing Valve, springloaded mit Gewindeanschluss / with screwed ends	D/G/F	6 - 65 1/8 - 2½	100	0,25 - 78,0
Typ 71	Druckminderventil, federbelastet Pressure Reducing Valve, springloaded mit Flanschanschluss, Sonderflansche / with flanged ends, special flanges	D/G/F	10 - 100 1/2 - 4	100	0,25 - 78,0
Typ 74	Druckminderventil, federbelastet Pressure Reducing Valve, springloaded Gewindeanschluss, Membranventil / with screwed ends, diaphragm valve	D/G/F	8 - 65 1/4 - 2½	25	0,004 - 1,0
Typ 75	Druckminderventil, federbelastet Pressure Reducing Valve, springloaded mit Flanschen, Sonderflanschen, Membranventil / with flanges, special flanges, diaphragm valve	D/G/F	10 - 80 1/2 - 3	25	0,004 - 1,0
Typ 76	Nur auf Anfrage / only on request Druckminderventil, federbelastet Pressure Reducing Valve, springloaded mit Gewindeanschluss / with screwed ends	D/G/F	15	100 - 600	30 - 245

Medium
- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

Vordruck / inlet pressure..... - P_1 -
Minderdruck / reduced pressure..... - P_2 -

* BG 00 nicht für Dampf / Size 00 not for steam

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

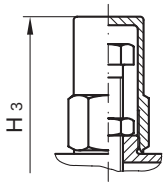
für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 70

Typ 70.2 : Wst. / Material 1.4301
Typ 70.2 : Wst. / Material 1.4571

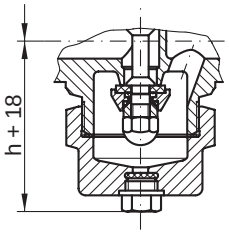
Industrie - Ausführung / Industry - design

Vordruckunabhängig / Initial pressure independent



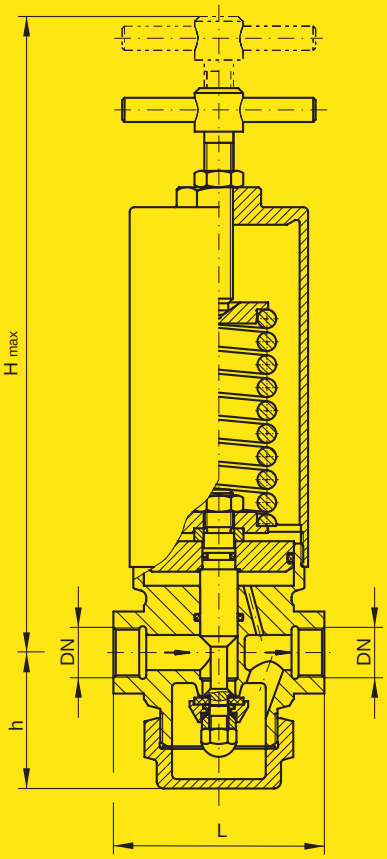
Druckminderventil mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verschlusskappe mit Entwässerungsschraube
auf Anfrage

Bottom plug with drainage screw
on request



BG I - III B

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				Gewicht Weight
	DN		Vordruck P_1 Inlet pressure P_1 bis / to	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal maximal	L	H_{max}	H_3	h	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[bar(g)]	[mm]	[mm]	[mm]	[mm]	[kg]
00***	6 8	1/8 1/4	16	6 8	1/8 1/4	1,00 / 7,7	58	149	-	36	1,1
0	8* 10 15*	1/4* 3/8 1/2*	63	8* 10 15*	1/4* 3/8 1/2*	0,35 / 14,4 (20,0)	70	205	180	48	1,8
I	15 20 25*	1/2 3/4 1*	100 63 63	15 20 25*	1/2 3/4 1*	0,35 / 52,0 (78,0)	90 90 135	275	250	58	3,7
II	25 32 40*	1 1¼ 1½*	63	25 32 40*	1 1¼ 1½*	0,25 / 23,0 (31,0)	105 105 155	300	265	68	5,2
III 2)	40 50 65*	1½ 2 2½*	63 40 40	40 50 65*	1½ 2 2½*	0,25 / 18,8 (21,0)	145 145 210	325	305	85	9,6
III B 2)	50 65	2 2½	40	50 65	2 2½	0,25 / 12,0 (15,5)	220	540	520	145	

* Sondergröße / special size ** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70) / spring range for reduced pressure see over-leaf (MDT-70)
*** Nicht für Wasserdampf einsetzbar / not for water steam applicable

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 70

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1{,}1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1{,}1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	00	0	I	II	III	III B
Eintr./Austr.	DN 6, DN 8	DN 8, DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65
Inlet/Outlet	1/8, 1/4	1/4, 3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]					
						0,25 - 0,44
						0,35 - 0,73
Ø 119						0,50 - 1,10
						0,80 - 1,65
						1,30 - 2,65
						1,90 - 3,85
					0,25 - 0,47	0,80 - 1,60
Ø 99					0,36 - 0,72	1,20 - 2,40
					0,57 - 1,15	1,90 - 3,80
					1,00 - 2,00	2,80 - 5,60
				0,25 - 0,50	0,80 - 1,60	2,60 - 5,30
				0,40 - 0,83	1,40 - 2,80	3,80 - 7,70
Ø 84				0,65 - 1,30	1,60 - 3,20	4,50 - 9,10
				1,00 - 2,00		6,00 - 12,00
				1,40 - 2,80		
		0,35 - 0,60	0,35 - 0,54	1,70 - 3,50	1,40 - 2,80	
		0,40 - 0,90	0,50 - 0,94	2,40 - 4,80	2,40 - 4,80	
Ø 64		0,60 - 1,30	0,70 - 1,50	3,00 - 6,10	2,70 - 5,40	
		0,80 - 1,70	1,00 - 2,40		3,50 - 6,90	
		1,00 - 2,20	1,80 - 3,80			
			2,60 - 5,30			
		1,20 - 2,40	3,30 - 6,70	3,00 - 6,10	4,20 - 8,50	
Ø 48		1,50 - 3,10	4,70 - 9,50	4,30 - 8,60	4,80 - 9,60	
		1,90 - 3,90	6,00 - 12,20	5,50 - 11,00	6,50 - 12,30	
				7,50 - 14,50	9,50 - 18,80	
	1,00 - 1,70	1,30 - 2,50	5,40 - 10,70	5,00 - 9,80		
	1,40 - 2,70	1,90 - 3,80	7,50 - 15,00	7,00 - 13,80		
	1,70 - 3,30	2,50 - 5,00	10,00 - 19,50	9,00 - 17,50		
	1,80 - 3,50	3,00 - 6,10	13,00 - 26,00	12,00 - 23,00		
Ø 38	2,00 - 4,00					
	2,40 - 4,80					
	2,70 - 5,30					
	2,80 - 5,60					
	3,50 - 6,20					
	5,00 - 7,70					
		2,50 - 5,00	11,00 - 21,00			
		3,70 - 7,50	15,00 - 30,00			
Ø 27		5,00 - 9,80	20,00 - 38,00			
		6,00 - 12,20	26,00 - 52,00			
		7,00 - 14,40				

größere Minderdruckbereiche auf Anfrage / expanded reduced pressure range on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 70

Discharge capacities
for saturated steam

for definition the size of Pressure-Reducing-Valve

Size		0	I		II		III		III B	
Nominal pipe		10	15	20	25	32	40	50	50	65
		3/8	1/2	3/4	1	1¼	1½	2	2	2½
Overpressure $p_ü$ [bar(g)]		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180
	0,2	5	11	19	31	46	99	145	145	210
	0,3	6	13	23	35	55	112	160	160	240
	0,5	7	16	28	46	70	140	200	200	300
	0,75	9	20	35	57	85	175	250	250	370
	1	11	25	42	68	100	210	300	300	450
	1,5	14	32	55	90	140	280	400	400	590
	2	17	40	70	115	170	350	520	520	750
	2,5	21	47	84	135	200	400	600	600	880
	3	24	55	99	155	240	480	700	700	1020
	4	31	70	123	195	300	600	890	890	1300
	5	38	85	150	245	360	740	1080	1080	1600
	6	46	104	185	300	450	900	1340	1340	1950
	7	54	122	225	350	540	1100	1600	1600	2400
	8	62	140	250	400	600	1250	1800	1800	2700
	9	71	160	280	450	680	1380	2000	2000	2900
	10	80	180	320	500	750	1500	2300	2300	3300
	12	98	220	380	610	900	1850	2700	2700	4000
	14	115	260	450	720	1050	2300	3100	3100	4700

a) To the defination of the right valve size according to the table, the downstreampressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{absolute reduced pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

If the downstream pipe should be longer than 3 meters, then it is to be selected

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

P_1 > 15 [bar(g)] (>200°C): on request

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

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für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

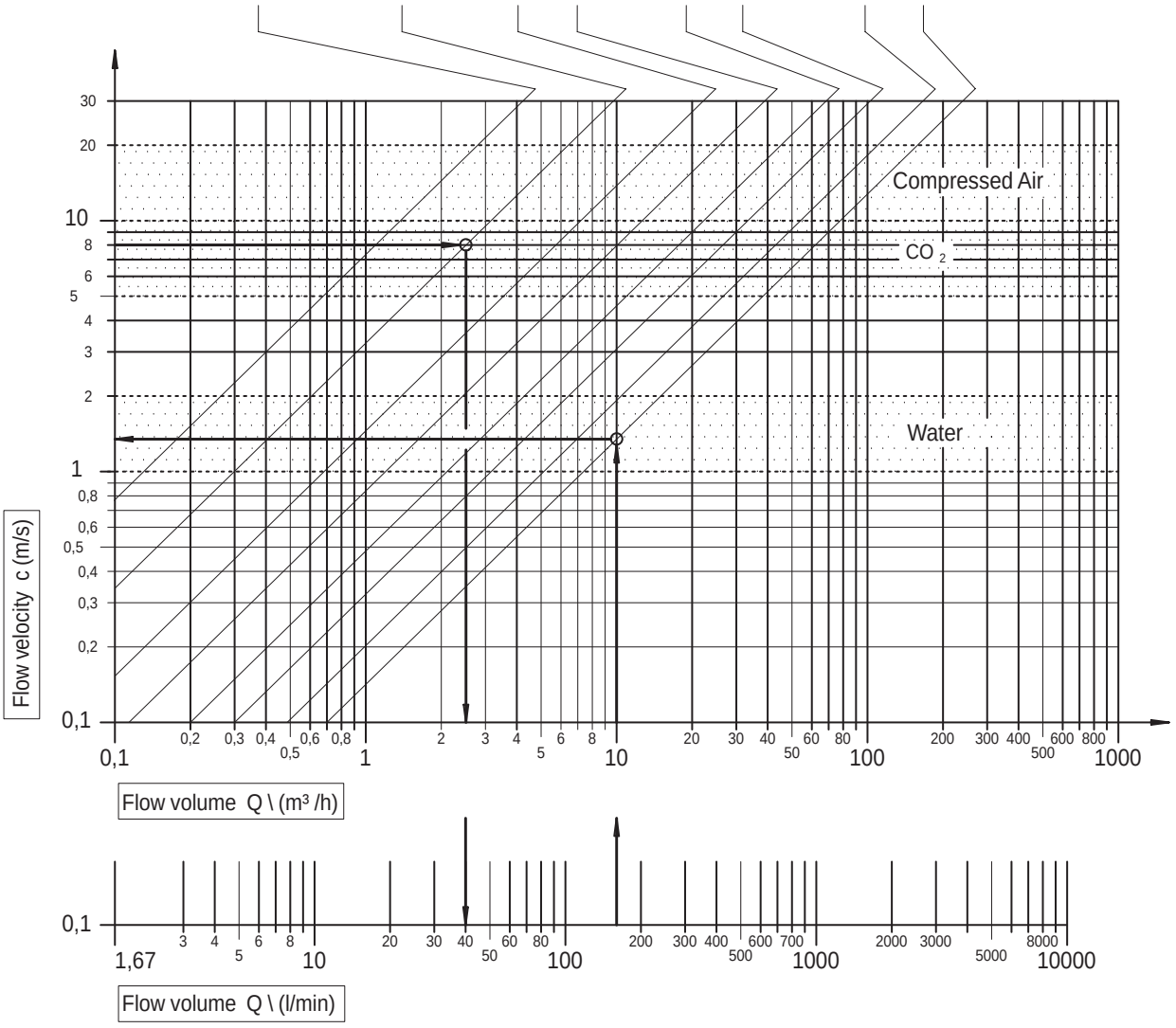
Typ 70

Troughput diagram for pressure reducing valve
(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	00		0			I			II			III			III B	
Inlet / Outlet	DN 6	DN 8	DN 8	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65
	1/8	1/4	1/4	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2
K_{VS}- Wert	0,63		1,2	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28



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Pressure-Reducing-Valve, springloaded

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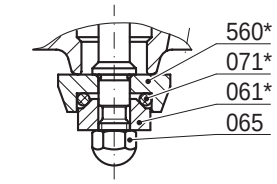
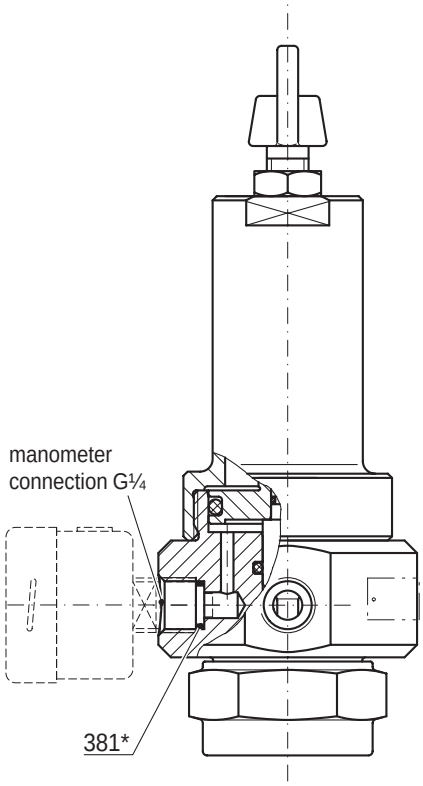
for steam, gases and liquids, expanded range of adjustment

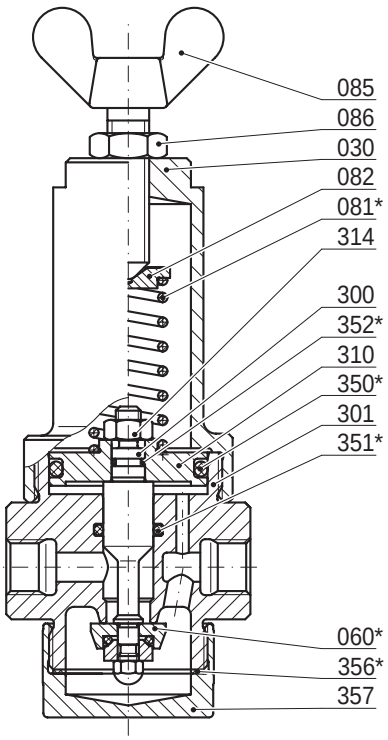
Typ 70

Typ 70.2 : Wst. / Material 1.4571 G 1/8, 1/4



disc complete, pos. 060*





Size 00

Item	Description	Material	Item	Description	Material
301	1 valve body	1.4571	086	1 lock nut	A2
030	1 spring bonnet	1.4571	300	1 piston	1.4571
060*	1 disc, complete		310	1 piston plate	1.4571
560*	1 disc	PTFE 2)	314	1 lock nut	A2
061*	1 pressure piece	1.4571	350*	1 o-ring	FPM 1)
065*	1 disc bolt	A4	351*	1 o-ring	FPM 1)
071*	1 o-ring	FPM 1)	352*	1 o-ring	FPM 1)
081*	1 spring	1.4310	356*	1 sealing ring	PTFE
082	1 springplate, upper	1.4305	357	1 bottom plug	1.4571
085	1 adjusting screw	1.4305	381*	1 sealing ring	PTFE

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* expendable parts

1) other materials on request

2) other design: Nylon

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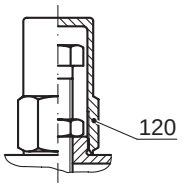
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

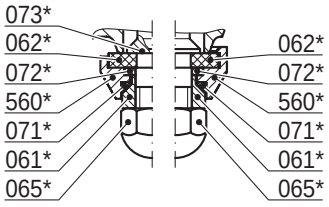
Typ 70

Typ 70.2 : Wst. / Material 1.4301
Typ 70.2 : Wst. / Material 1.4571

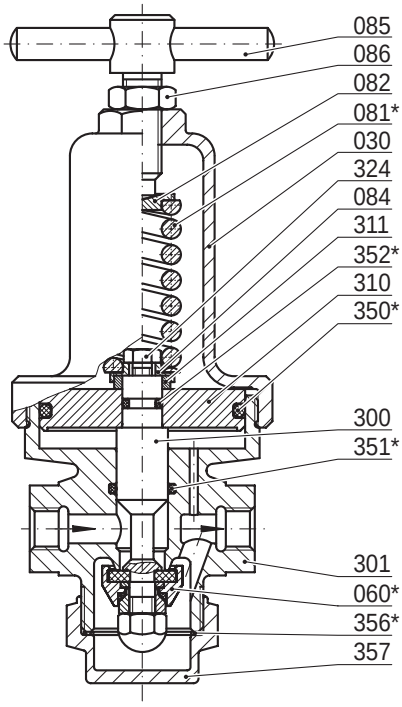
G 1/4, 3/8, 1/2



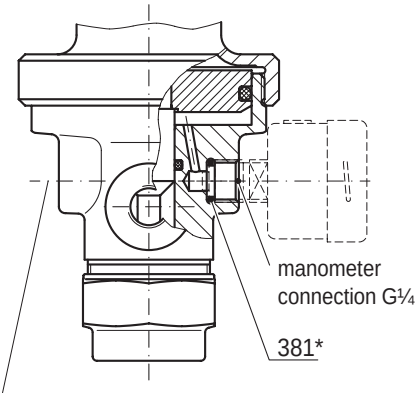
Valve with top cap
on request



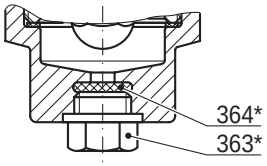
disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size 0



2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
301	1 valve body	1.4301	1.4571	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4581	1.4581	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4571
560*	1 disc	1.4571	1.4571	310	1 piston plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1		324	1 screw	A2	A2
065*	1 disc bolt	A4	A4	350*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	381*	1 sealing ring	PTFE	PTFE

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* expendable parts

[1] other materials on request

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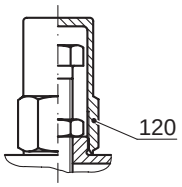
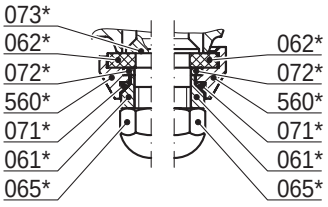
Typ 70

Typ 70.2 : Wst. / Material 1.4301
Typ 70.2 : Wst. / Material 1.4571

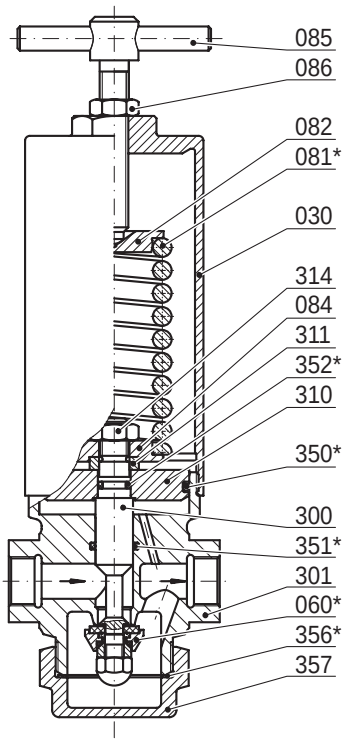
G 1/2, 3/4, 1, 1¼, 1½, 2, 2½



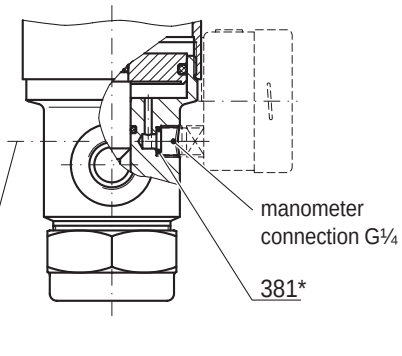
Valve with top cap
on request



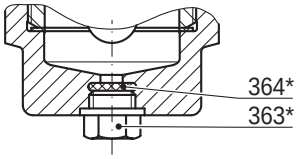
disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size I - III B



2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
301	1 valve body	1.4301	1.4571	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4301	1.4301	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4571
560*	1 disc	1.4571	1.4571	310	1 piston plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1		314	1 lock nut	A2	A2
065*	1 disc bolt	A4	A4	350*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	381*	1 sealing ring	PTFE	PTFE

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* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

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Pressure-Reducing-Valve, springloaded

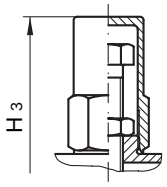
für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 71

Typ 71.2 : Wst. / Material 1.4301
Typ 71.2 : Wst. / Material 1.4571 / 1.4581

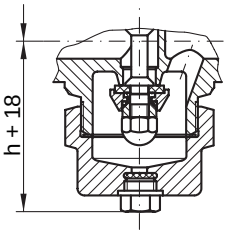
Industrie - Ausführung / Industry - design

Vordruckunabhängig / Initial pressure independent



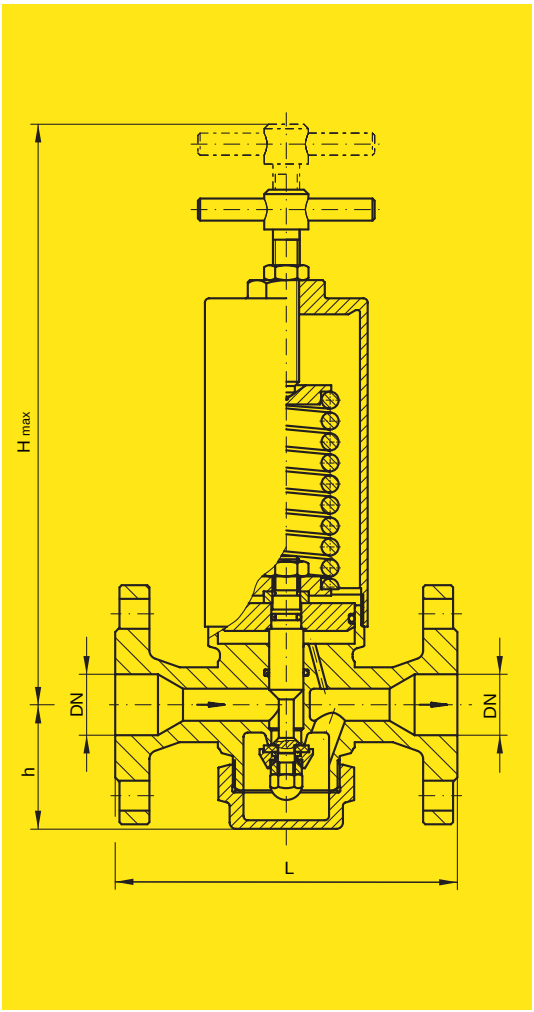
Druckminderventil mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verschlusskappe mit Entwässerungsschraube
auf Anfrage

Bottom plug with drainage screw
on request



BG I - III B

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				Gewicht Weight
	DN		Vordruck P_1 Inlet pressure P_1 bis / to	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal / maximal	L***	H max	H 3	h	
	DIN	ANSI		DIN	ANSI						
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[kg]
0	10 15*	- 1/2*	63	10 15*	- 1/2*	0,35 / 14,4 (20,0)	130	205	180	48	2,3
I	15 20 25*	1/2 3/4 1*	100 63 63	15 20 25*	1/2 3/4 1*	0,35 / 52,0 (78,0)	130 150 160	275	250	58	5,8
II	25 32 40*	1 1¼ 1½*	63	25 32 40*	1 1¼ 1½*	0,25 / 23,0 (31,0)	160 180 200	300	265	68	7,4
III 1)	40 50 65*	1½ 2 2½*	63 40 40	40 50 65*	1½ 2 2½*	0,25 / 18,8 (21,0)	200 230 290	325	305	85	13,5
III B 1)	50 65 80	2 2½ 3	40	50 65 80	2 2½ 3	0,25 / 12,0 (15,5)	300 290 310	540	520	145	35,0 37,0
IV	65 80 100*	2½ 3 4*	40	65 80 100*	2½ 3 4*	0,25 / 12,0 (15,5)	290 310 350	545	530	155	34,0 47,0

* Sondergröße / special size ** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-71) / spring range for reduced pressure see over-leaf (MDT-71)
*** Bis PN40 / Class 300 höhere Drücke auf Anfrage. / PN40 / Class 300 higher pressures on request.

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für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 71

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	0	I	II	III	III B	IV
Eintr./Austr.	DN 8, DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65, DN 80	DN 65, DN 80, DN 100
Inlet/Outlet	1/4, 3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½, 3	2½, 3, 4
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]					
						0,25 - 0,55
						0,40 - 0,80
Ø 139						0,60 - 1,20
						0,90 - 1,95
						1,40 - 2,85
					0,25 - 0,44	
					0,35 - 0,73	
Ø 119					0,50 - 1,10	
					0,80 - 1,65	
					1,30 - 2,65	
					1,90 - 3,85	
				0,25 - 0,47	0,80 - 1,60	1,90 - 3,80
Ø 99				0,36 - 0,72	1,20 - 2,40	2,80 - 5,60
				0,57 - 1,15	1,90 - 3,80	3,30 - 6,60
				1,00 - 2,00	2,80 - 5,60	
			0,25 - 0,50	0,80 - 1,60	2,60 - 5,30	3,80 - 7,70
			0,40 - 0,83	1,40 - 2,80	3,80 - 7,70	4,50 - 9,10
Ø 84			0,65 - 1,30	1,60 - 3,20	4,50 - 9,10	6,00 - 12,00
			1,00 - 2,00		6,00 - 12,00	
			1,40 - 2,80			
	0,35 - 0,60	0,35 - 0,54	1,70 - 3,50	1,40 - 2,80		
	0,40 - 0,90	0,50 - 0,94	2,40 - 4,80	2,40 - 4,80		
Ø 64	0,60 - 1,30	0,70 - 1,50	3,00 - 6,10	2,70 - 5,40		
	0,80 - 1,70	1,00 - 2,40		3,50 - 6,90		
	1,00 - 2,20	1,80 - 3,80				
		2,60 - 5,30				
	1,20 - 2,40	3,30 - 6,70	3,00 - 6,10	4,20 - 8,50		
Ø 48	1,50 - 3,10	4,70 - 9,50	4,30 - 8,60	4,80 - 9,60		
	1,90 - 3,90	6,00 - 12,20	5,50 - 11,00	6,50 - 12,30		
			7,50 - 14,50	9,50 - 18,80		
	1,30 - 2,50	5,40 - 10,70	5,00 - 9,80			
Ø 38	1,90 - 3,80	7,50 - 15,00	7,00 - 13,80			
	2,50 - 5,00	10,00 - 19,50	9,00 - 17,50			
	3,00 - 6,10	13,00 - 26,00	12,00 - 23,00			
	2,50 - 5,00	11,00 - 21,00				
	3,70 - 7,50	15,00 - 30,00				
Ø 27	5,00 - 9,80	20,00 - 38,00				
	6,00 - 12,20	26,00 - 52,00				
	7,00 - 14,40					

größere Minderdruckbereiche auf Anfrage / expanded reduced pressure range on request

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Typ 71

Discharge capacities
for saturated steam

for definition the size of Pressure-Reducing-Valve

Size		0	I		II		III		III B		IV		
Nominal pipe		10	15	20	25	32	40	50	50	65	65	80	100
		3/8	1/2	3/4	1	1¼	1½	2	2	2½	2½	3	4
Overpressure $p_ü$ [bar(g)]		kg/h											
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180	180	260	420
	0,2	5	11	19	31	46	99	145	145	210	210	310	500
	0,3	6	13	23	35	55	112	160	160	240	240	360	560
	0,5	7	16	28	46	70	140	200	200	300	300	440	700
	0,75	9	20	35	57	85	175	250	250	370	370	560	870
	1	11	25	42	68	100	210	300	300	450	450	680	1040
	1,5	14	32	55	90	140	280	400	400	590	590	880	1400
	2	17	40	70	115	170	350	520	520	750	750	1120	1750
	2,5	21	47	84	135	200	400	600	600	880	880	1310	2100
	3	24	55	99	155	240	480	700	700	1020	1020	1540	2400
	4	31	70	123	195	300	600	890	890	1300	1300	1900	3000
	5	38	85	150	245	360	740	1080	1080	1600	1600	2400	3700
	6	46	104	185	300	450	900	1340	1340	1950	1950	2900	4700
	7	54	122	225	350	540	1100	1600	1600	2400	2400	3400	5500
	8	62	140	250	400	600	1250	1800	1800	2700	2700	4000	6200
	9	71	160	280	450	680	1380	2000	2000	2900	2900	4400	6900
	10	80	180	320	500	750	1500	2300	2300	3300	3300	5000	7800
	12	98	220	380	610	900	1850	2700	2700	4000	4000	6000	9200
	14	115	260	450	720	1050	2300	3100	3100	4700	4700	7000	11000

a) To the defination of the right valve size according to the table, the downstreampressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{absolute reduced pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}_D^1 \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}_D^1 \circ f$$

If the downstream pipe should be longer than 3 meters, then it is to be selected

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE, Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE, Gasket ring AF 100

P_1 > 15 [bar(g)] (>200°C): on request

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam

f : correction factor

$\dot{m}_D^1$: given mass flow

$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

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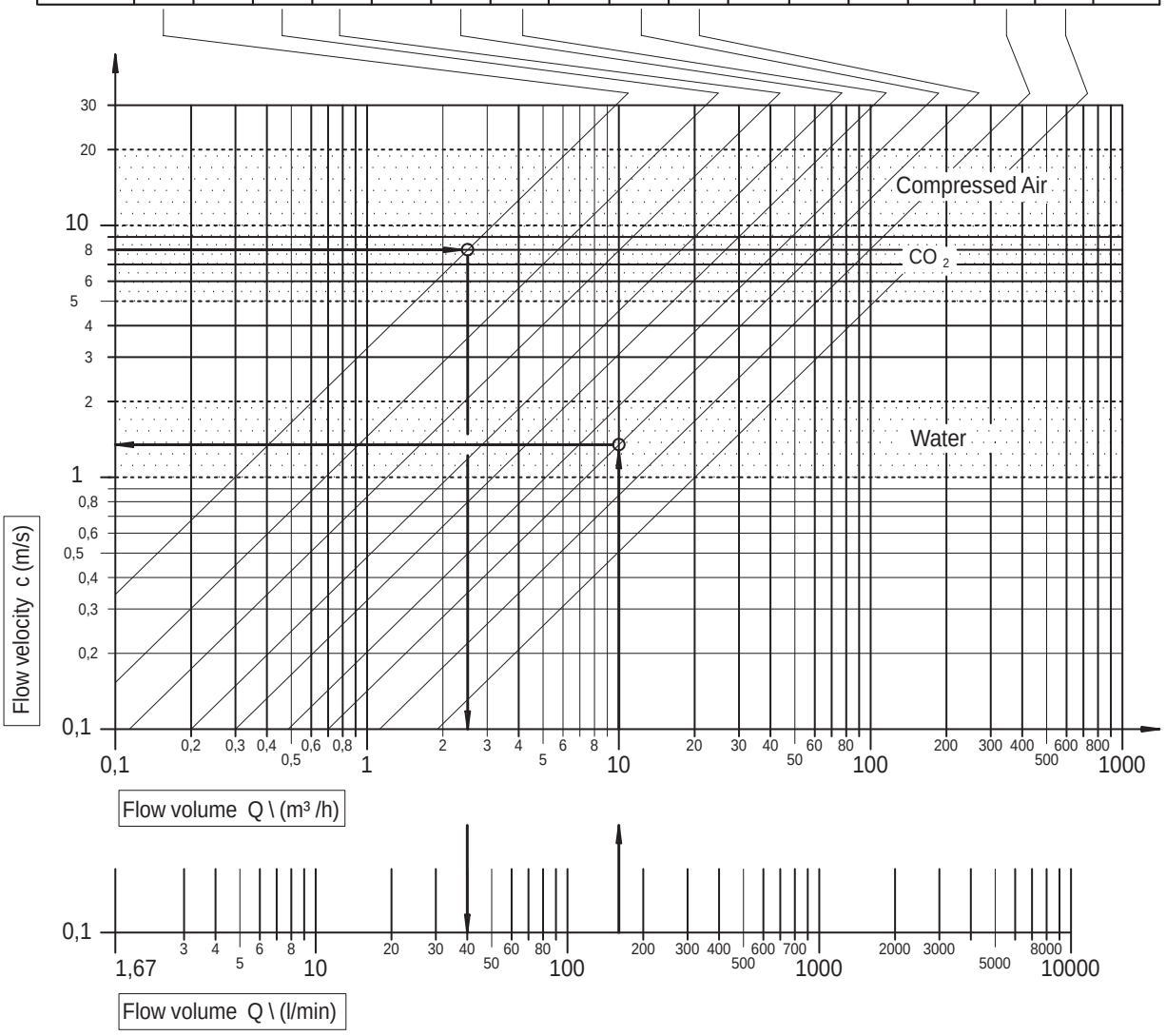
Typ 71

Troughput diagram for pressure reducing valve
(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	0		I			II			III			III B			IV		
Inlet / Outlet	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65	DN 80	DN 65	DN 80	DN 100
	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2	3	2 1/2	3	4
K_{VS}- Wert	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28,0	28,5	48	50	53



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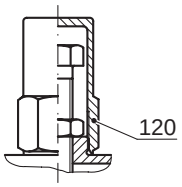
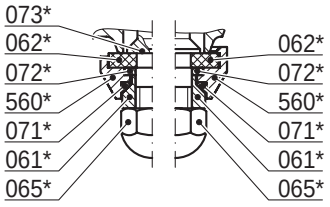
Typ 71

Typ 71.2 : Wst. / Material 1.4301
Typ 71.2 : Wst. / Material 1.4571

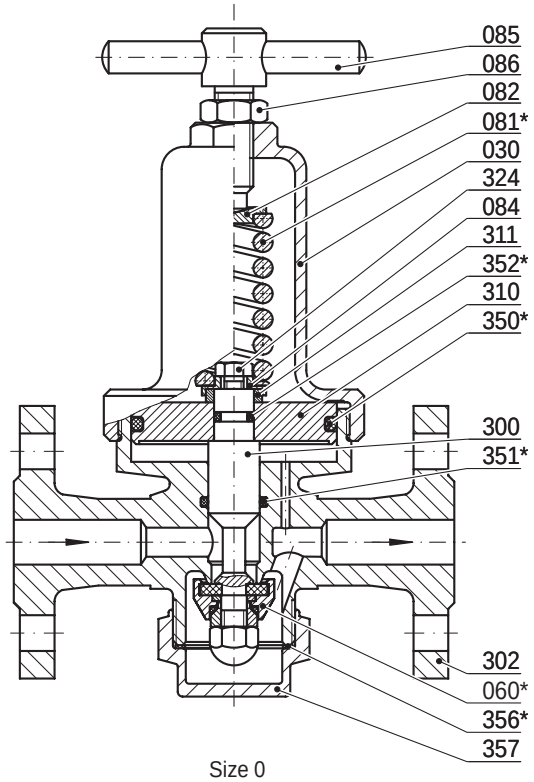
DN 10, 15



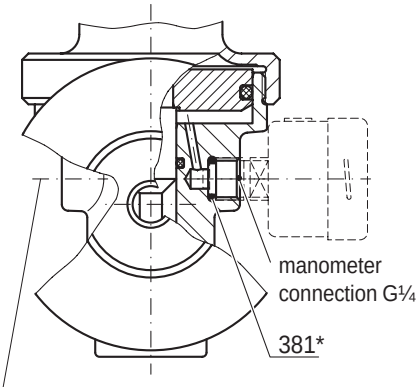
Valve with top cap
on request



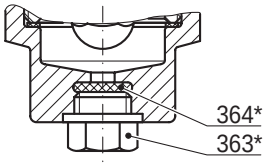
disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size 0



2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
302	1 valve body with flanges	1.4301	1.4571	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4581	1.4581	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4571
560*	1 disc	1.4571	1.4571	310	1 piston plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1		324	1 screw	A2	A2
065*	1 disc bolt	A4	A4	350*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	381*	1 sealing ring	PTFE	PTFE

ngl 01'06

* expendable parts

[1] other materials on request

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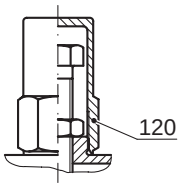
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

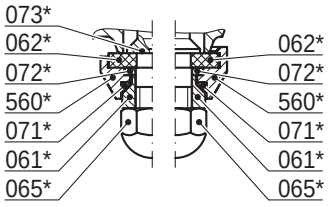
Typ 71

Typ 71.2 : Wst. / Material 1.4301
Typ 71.2 : Wst. / Material 1.4571

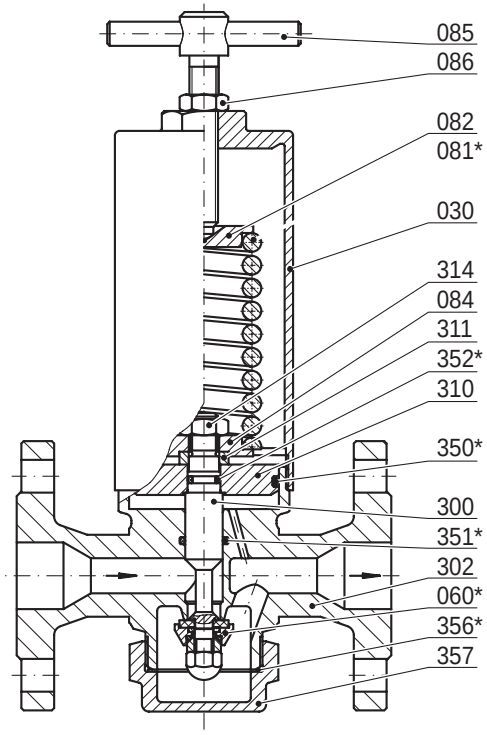
DN 15, 20, 25, 32,
40, 50, 65, 80



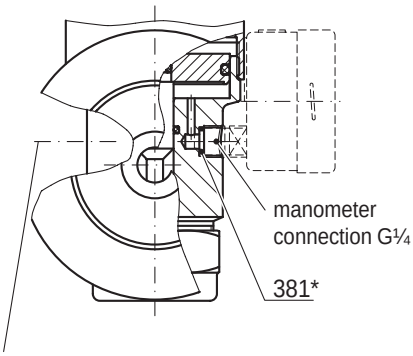
Valve with top cap
on request



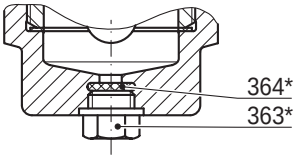
disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size I - III B



2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
302	1 valve body with flanges	1.4301	1.4571	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4301	1.4301	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4571
560*	1 disc	1.4571	1.4571	310	1 piston plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	see techn. appendix: KWD-1		314	1 lock nut	A2	A2
065*	1 disc bolt	A4	A4	350*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	381*	1 sealing ring	PTFE	PTFE

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* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

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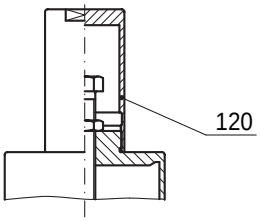
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

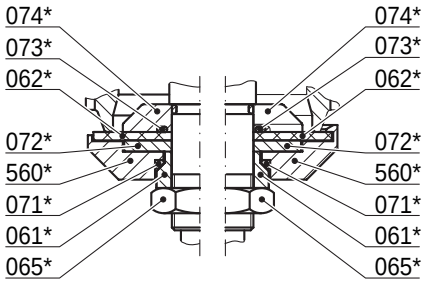
für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 71

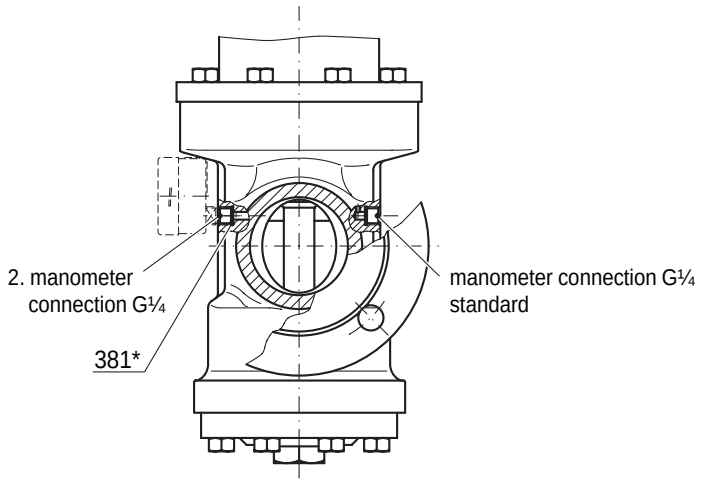
Typ 71.2 : Wst. / Material 1.4581 DN 65, 80, 100

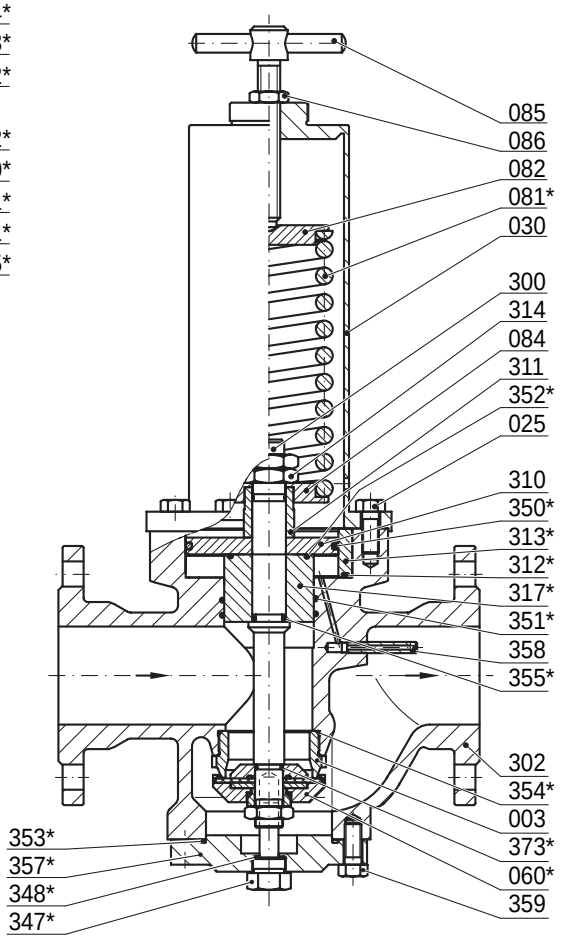


Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated





Size IV

Item	Description	Material	Item	Description	Material
302	1 valve body with flanges	1.4581	300	1 piston	1.4571
003	1 seat	1.4571	310	1 piston plate	1.4571
025	8 screw	A4	311	1 distance bush	1.4305
030	1 spring bonnet	1.4301	312*	1 o-ring	FPM [1]
060*	1 disc, complete		313*	1 piston plate ring	1.4571
560*	1 disc	1.4571	314	2 lock nut	A2
061*	1 pressure piece	1.4571	317*	1 piston guide	1.4571
062*	1 soft sealing	see techn. appendix: KWD-1	347*	1 piston guide screw	1.4571
065*	1 disc bolt	A4	348*	1 o-ring	FPM [1]
071*	1 o-ring	FPM [1]	350*	1 o-ring	FPM [1]
072*	1 locking ring	1.4571	351*	2 o-ring	FPM [1]
073*	1 o-ring	FPM [1]	352*	1 o-ring	FPM [1]
074*	1 disc plate	1.4571	353*	1 o-ring	FPM [1]
081*	1 spring	1.4310	354*	1 o-ring	FPM [1]
082	1 springplate, upper	1.4305	355*	1 o-ring	FPM [1]
084	1 springplate, lower	1.4305	357*	1 bottom plug	1.4571
085	1 adjusting screw	1.4305	358	1 suction tube	A4
086	1 lock nut	A2	359	8 screw	A2
120	1 cap	1.4571	373*	1 o-ring	FPM [1]
			381*	1 sealing ring	PTFE

* expendable parts

[1] other materials on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

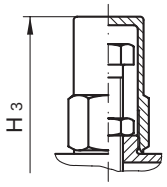
für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 74

Typ 74.2 : Wst. / Material 1.4301
Typ 74.2 : Wst. / Material 1.4571

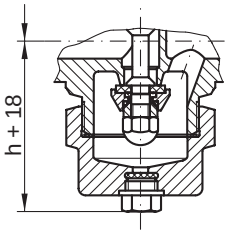
Industrie - Ausführung / Industry - design

Vordruckunabhängig / Initial pressure independent



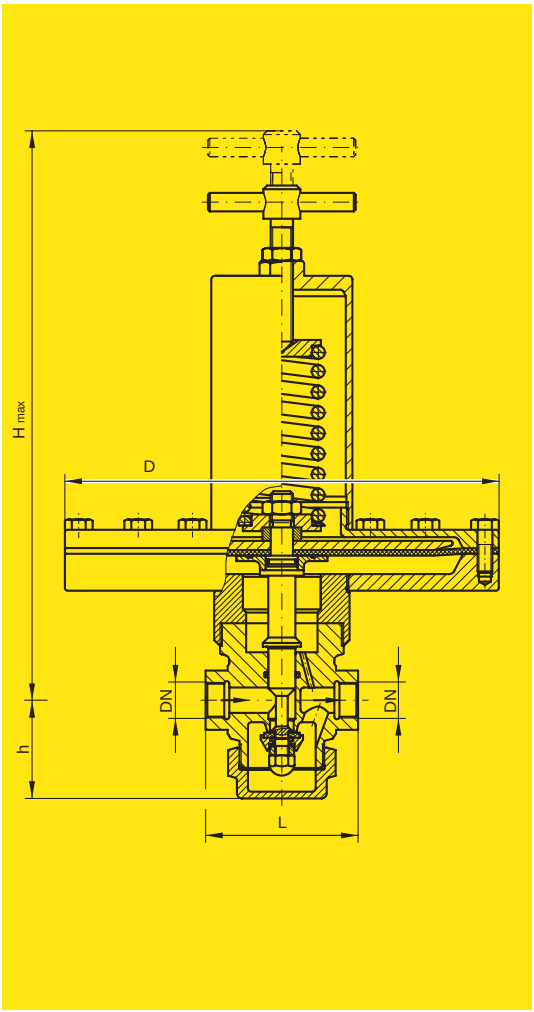
Druckminderventil mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verschlusskappe mit Entwässerungsschraube
auf Anfrage

Bottom plug with drainage screw
on request



Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions								Gewicht Weight
	DN		Vordruck P_1 Inlet pressure P_1 bis / to	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal maximal	Membran- D diaphragm- D Ausführung / Design				L	H_{max}	H_3	h	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[bar(g)]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
0	8 10 15*	1/4 3/8 1/2*	25	8 10 15*	1/4 3/8 1/2*	0,004 / 0,96	405	310	235	190	70	320	280	48	9,5
I	15 20 25*	1/2 3/4 1*		15 20 25*	1/2 3/4 1*	0,004 / 0,92					90 90 135	310	285	58	10,5 10,5 13,7
II	25 32 40*	1 1¼ 1½*	16	25 32 40*	1 1¼ 1½*	0,004 / 0,85					105 105 155	320	300	68	12,1 12,1 15,3
III 2)	40 50 65*	1½ 2 2½*		40 50 65*	1½ 2 2½*	0,004 / 0,79					145 145 210	350	330	85	18,1 18,1 21,3
III B 2)	50 65	2 2½		50 65	2 2½	0,004 / 0,42					220 220	580	560	145	

* Sondergröße / special size ** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-74) / spring range for reduced pressure see over-leaf (MDT-74)

1) Gewindemuffe nach DIN ISO 228, andere auf Anfrage / female screw acc. to DIN ISO 228, other on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 74

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

Baugröße / Size	0	I	II	III	III B
Eintr./Austr.	DN 8, DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65
Inlet/Outlet	1/4, 3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]				
	0,004 - 0,0075	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,006 - 0,013	0,006 - 0,012	0,0055 - 0,011	0,0055 - 0,011	0,006 - 0,012
Ø 405	0,011 - 0,022	0,011 - 0,021	0,01 - 0,02	0,01 - 0,019	0,01 - 0,02
	0,02 - 0,04	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,035
	0,033 - 0,065	0,03 - 0,06	0,03 - 0,058	0,027 - 0,054	0,029 - 0,058
	0,015 - 0,026	0,015 - 0,025	0,015 - 0,023	0,015 - 0,022	0,015 - 0,023
	0,025 - 0,045	0,025 - 0,044	0,02 - 0,04	0,018 - 0,037	0,02 - 0,04
Ø 310	0,04 - 0,08	0,04 - 0,077	0,035 - 0,07	0,033 - 0,066	0,035 - 0,07
	0,06 - 0,13	0,06 - 0,127	0,06 - 0,12	0,06 - 0,11	0,058 - 0,116
				0,08 - 0,17	0,09 - 0,18
	0,05 - 0,06	0,05 - 0,057	0,05 - 0,09	0,05 - 0,085	0,05 - 0,09
	0,05 - 0,10	0,05 - 0,10	0,08 - 0,16	0,07 - 0,15	0,08 - 0,16
Ø 235	0,09 - 0,18	0,09 - 0,17	0,13 - 0,26	0,12 - 0,25	0,13 - 0,26
	0,15 - 0,30	0,15 - 0,29	0,20 - 0,41	0,19 - 0,38	0,21 - 0,42
	0,10 - 0,21	0,10 - 0,20	0,09 - 0,19	0,10 - 0,17	
	0,18 - 0,37	0,18 - 0,36	0,16 - 0,33	0,16 - 0,31	
Ø 190	0,30 - 0,61	0,30 - 0,59	0,25 - 0,54	0,25 - 0,50	
	0,50 - 0,96	0,50 - 0,92	0,42 - 0,85	0,40 - 0,79	

größere Minderdruckbereiche auf Anfrage / expanded ireduced pressure range on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 74

Discharge capacities
for saturated steam

for definition the size of Pressure-Reducing-Valve

Size		0	I		II		III		III B	
Over-pressure $p_ü$ [bar(g)] / Nominal pipe		10	15	20	25	32	40	50	50	65
		3/8	1/2	3/4	1	1¼	1½	2	2	2½
		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180
	0,2	5	11	19	31	46	99	145	145	210
	0,3	6	13	23	35	55	112	160	160	240
	0,5	7	16	28	46	70	140	200	200	300
	0,75	9	20	35	57	85	175	250	250	370
	1	11	25	42	68	100	210	300	300	450
	1,5	14	32	55	90	140	280	400	400	590
	2	17	40	70	115	170	350	520	520	750
	2,5	21	47	84	135	200	400	600	600	880
	3	24	55	99	155	240	480	700	700	1020
	4	31	70	123	195	300	600	890	890	1300
	5	38	85	150	245	360	740	1080	1080	1600
	6	46	104	185	300	450	900	1340	1340	1950
	7	54	122	225	350	540	1100	1600	1600	2400
	8	62	140	250	400	600	1250	1800	1800	2700

a) To the defination of the right valve size according to the table, the downstreampressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

absolute reduced pressure p [bar] / absolute inlet pressure p [bar]

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

If the downstream pipe should be longer than 3 meters, then it is to be selected

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE / Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE / Gasket ring AF 100

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

01'06

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für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

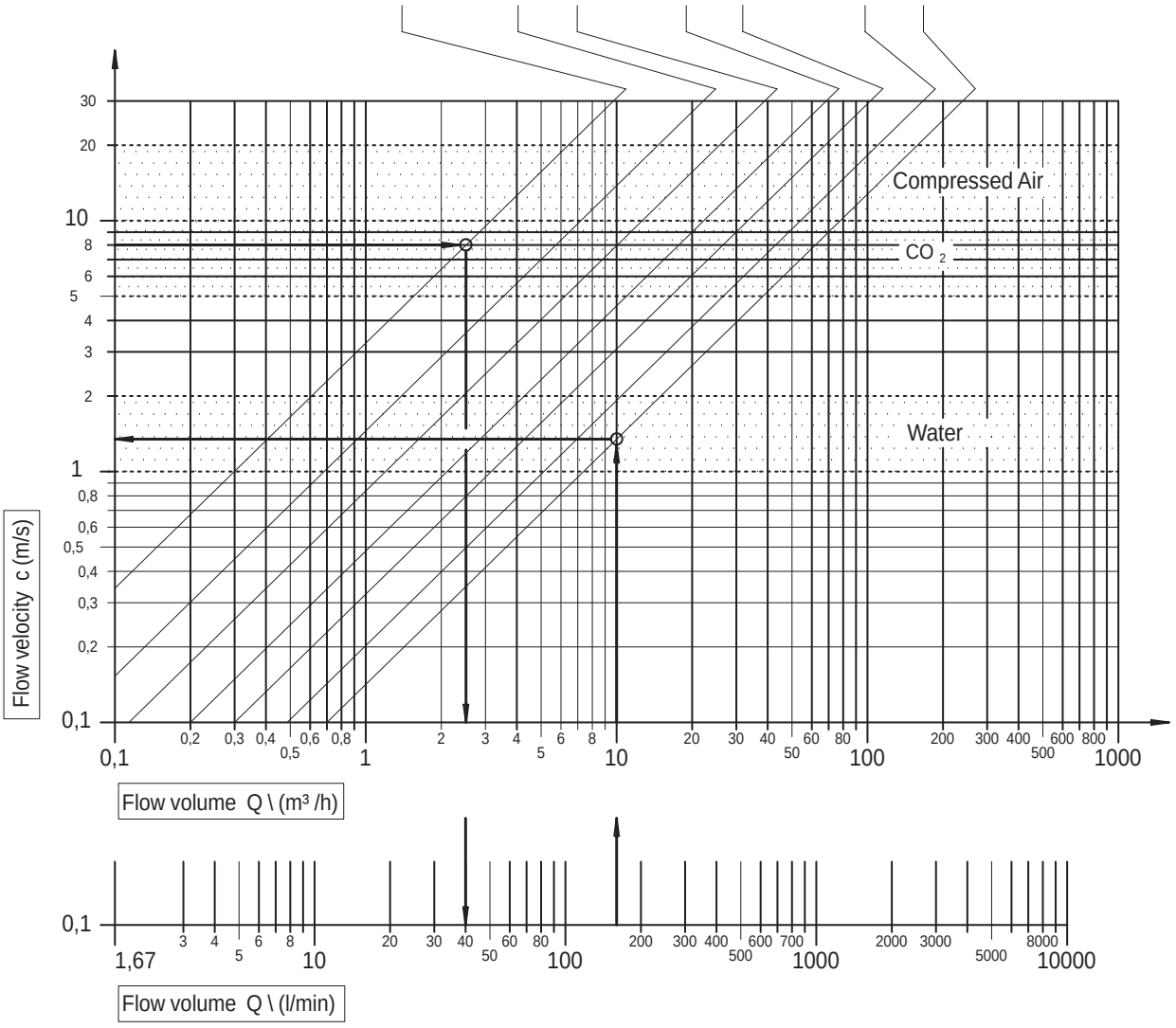
Typ 74

Troughput diagram for pressure reducing valve
(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	0			I			II			III			III B	
Inlet / Outlet	DN 8	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65
	1/4	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2
K_{VS}- Wert	1,2	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28



gl 01'06

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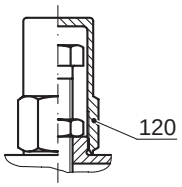
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

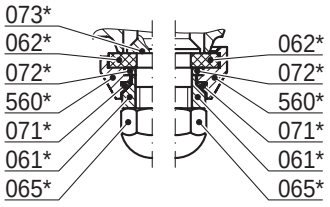
Typ 74

Typ 74.2 : Wst. / Material 1.4301
Typ 74.2 : Wst. / Material 1.4571

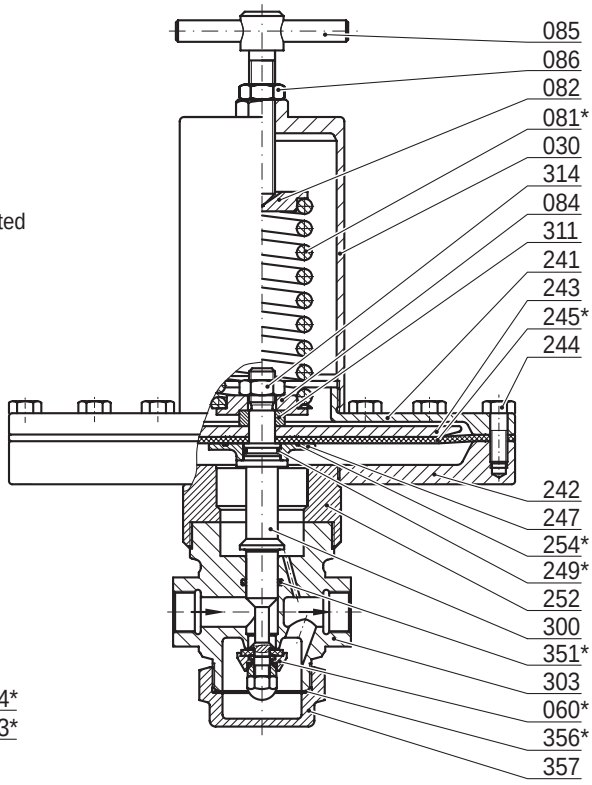
G 1/4, 3/8, 1/2, 3/4,
1, 1¼, 1½, 2, 2½

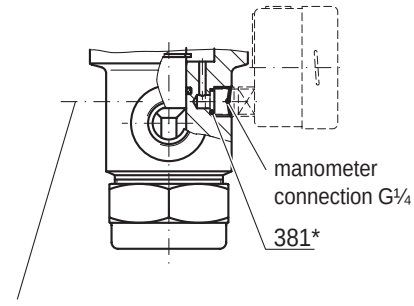


Valve with top cap
on request

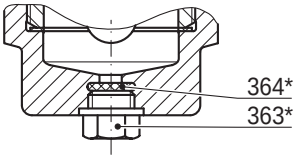


disc complete, pos. 060*
Thermoplast seated Elastomer seated





2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4571	242	1 lower housing	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	243	1 upper clamp plate	1.4571	1.4571
060*	1 disc, complete			244	16 screws	A2	A2
560*	1 disc	1.4571	1.4571	245*	1 diaphragm	EPDM	EPDM
061*	1 soft sealing	1.4571	1.4571	247	1 lower clamp plate	1.4571	1.4571
062*	1 soft sealing	see techn. appendix: KWD-1		249*	1 o-ring	FPM [1]	FPM [1]
065*	1 disc bolt	A4	A4	252	1 adapter	1.4571	1.4571
071*	1 o-ring	FPM [1]	FPM [1]	254*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4571
073*	1 o-ring	FPM [1]	FPM [1]	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	351*	1 o-ring	FPM [1]	FPM [1]
084	1 springplate, lower	1.4305	1.4305	356*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4571
086	1 lock nut	A2	A2	363*	1 drainage screw	A4	A4
120	1 cap	1.4571	1.4571	364*	1 sealing ring	PTFE	PTFE
241	1 upper housing	1.4571	1.4571	381*	1 sealing ring	PTFE	PTFE

* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

1'06

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

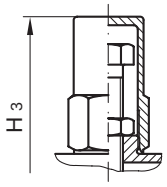
für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 75

Typ 75.2 : Wst. / Material 1.4301
Typ 75.2 : Wst. / Material 1.4571

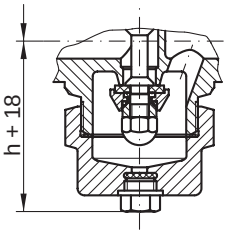
Industrie - Ausführung / Industry - design

Vordruckunabhängig / Initial pressure independent



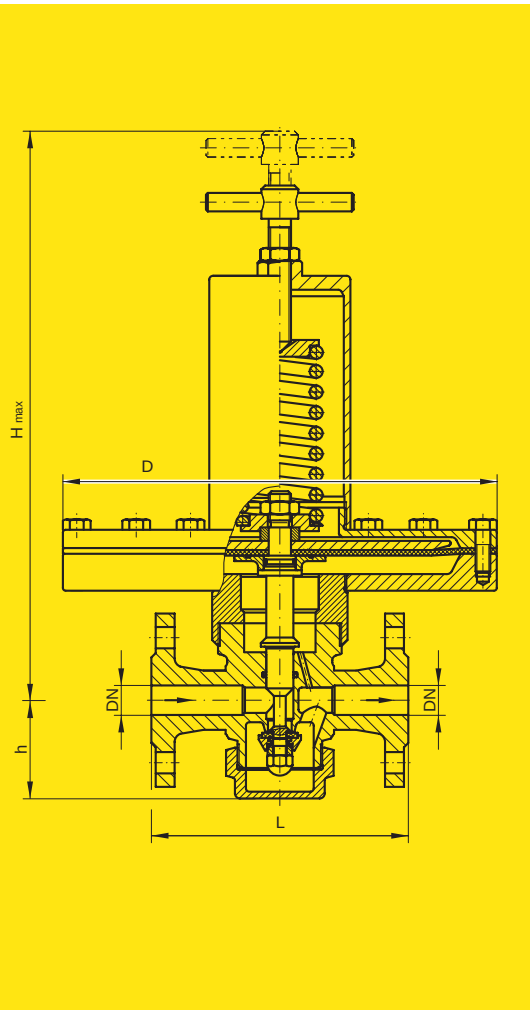
Druckminderventil mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verschlusskappe mit Entwässerungsschraube
auf Anfrage

Bottom plug with drainage screw
on request



Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions								Gewicht Weight
	DN		Vordruck P_1 Inlet pressure P_1	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2	Membran- D diaphragm- D Ausführung/Design								
	DIN	ANSI	bis / to	DIN	ANSI	minimal maximal					L	H_{max}	H_3	h	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
0	10 15*	- 1/2*	25	10 15*	- 1/2*	0,004 / 0,96	405	310	235	190	130	320	280	48	11,0
I	15 20	1/2 3/4		15 20	1/2 3/4	0,004 / 0,92					130 150	310	285	58	12,3 14,5
II	25 32	1 1¼	16	25 32	1 1¼	0,004 / 0,85					160 180	320	300	68	14,0 17,2
III [1)]	40 50	1½ 2		40 50	1½ 2	0,004 / 0,79					200 230	350	330	85	21,6 24,8
III B [1)]	50 65 80	2 2½ 3		50 65 80	2 2½ 3	0,004 / 0,42					300 290 310	580	560	145	39,0

* Sondergröße / special size ** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-75) / spring range for reduced pressure see over-leaf (MDT-75)
1) Nur in Werkstoff-Ausführung 1.4571 / only material-design 1.4571 () Noch möglicher Minderdruck / still possible reduced pressure

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 75

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1{,}1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1{,}1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

Baugröße / Size	0	I	II	III	III B
Eintr./Austr.	DN 10, DN 15	DN 15, DN 20	DN 25, DN 32	DN 40, DN 50	DN 65, DN 80
Inlet/Outlet	3/8, 1/2	1/2, 3/4	1, 1¼	1½, 2	2½, 3
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]				
	0,004 - 0,0075	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,006 - 0,013	0,006 - 0,012	0,0055 - 0,011	0,0055 - 0,011	0,006 - 0,012
Ø 405	0,011 - 0,022	0,011 - 0,021	0,01 - 0,02	0,01 - 0,019	0,01 - 0,02
	0,02 - 0,04	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,035
	0,033 - 0,065	0,03 - 0,06	0,03 - 0,058	0,027 - 0,054	0,029 - 0,058
	0,015 - 0,026	0,015 - 0,025	0,015 - 0,023	0,015 - 0,022	0,015 - 0,023
	0,025 - 0,045	0,025 - 0,044	0,02 - 0,04	0,018 - 0,037	0,02 - 0,04
Ø 310	0,04 - 0,08	0,04 - 0,077	0,035 - 0,07	0,033 - 0,066	0,035 - 0,07
	0,06 - 0,13	0,06 - 0,127	0,06 - 0,12	0,06 - 0,11	0,058 - 0,116
				0,08 - 0,17	0,09 - 0,18
	0,05 - 0,06	0,05 - 0,057	0,05 - 0,09	0,05 - 0,085	0,05 - 0,09
	0,05 - 0,10	0,05 - 0,10	0,08 - 0,16	0,07 - 0,15	0,08 - 0,16
Ø 235	0,09 - 0,18	0,09 - 0,17	0,13 - 0,26	0,12 - 0,25	0,13 - 0,26
	0,15 - 0,30	0,15 - 0,29	0,20 - 0,41	0,19 - 0,38	0,21 - 0,42
	0,10 - 0,21	0,10 - 0,20	0,09 - 0,19	0,10 - 0,17	
	0,18 - 0,37	0,18 - 0,36	0,16 - 0,33	0,16 - 0,31	
Ø 190	0,30 - 0,61	0,30 - 0,59	0,25 - 0,54	0,25 - 0,50	
	0,50 - 0,96	0,50 - 0,92	0,42 - 0,85	0,40 - 0,79	

größere Minderdruckbereiche auf Anfrage / expanded ireduced pressure range on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 75

Discharge capacities
for saturated steam

for definition the size of Pressure-Reducing-Valve

Size		0	I		II		III		III B	
Over-pressure $p_ü$ [bar(g)] / Nominal pipe		10	15	20	25	32	40	50	65	80
		3/8	1/2	3/4	1	1¼	1½	2	2½	3
		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	180	260
	0,2	5	11	19	31	46	99	145	210	310
	0,3	6	13	23	35	55	112	160	240	360
	0,5	7	16	28	46	70	140	200	300	440
	0,75	9	20	35	57	85	175	250	370	560
	1	11	25	42	68	100	210	300	450	680
	1,5	14	32	55	90	140	280	400	590	880
	2	17	40	70	115	170	350	520	750	1120
	2,5	21	47	84	135	200	400	600	880	1310
	3	24	55	99	155	240	480	700	1020	1540
	4	31	70	123	195	300	600	890	1300	1900
	5	38	85	150	245	360	740	1080	1600	2400
	6	46	104	185	300	450	900	1340	1950	2900
	7	54	122	225	350	540	1100	1600	2400	3400
	8	62	140	250	400	600	1250	1800	2700	4000

a) To the defination of the right valve size according to the table, the downstreampressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

absolute reduced pressure p [bar] / absolute inlet pressure p [bar]

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

If the downstream pipe should be longer than 3 meters, then it is to be selected

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

0106

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

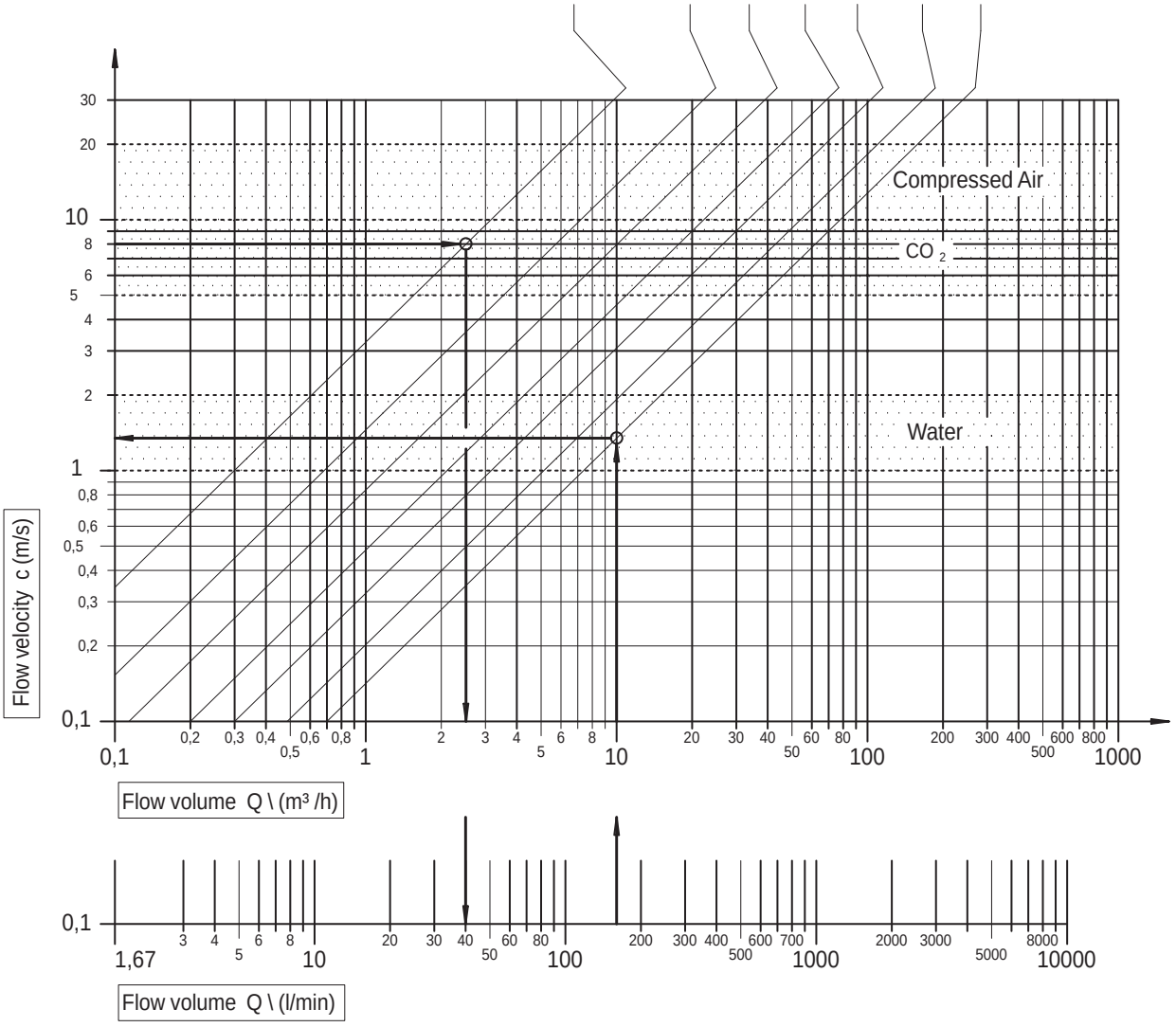
Typ 75

Troughput diagram for pressure reducing valve
(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	0		I		II		III		III B	
Inlet / Outlet	DN 10	DN 15	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
	3/8	1/2	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
K_{VS}- Wert	2	2,2	3	3,2	6,3	6,5	12,5	13	28	28,5



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Druckminderventil, federbelastet
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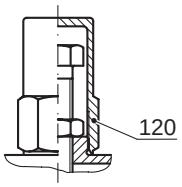
für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

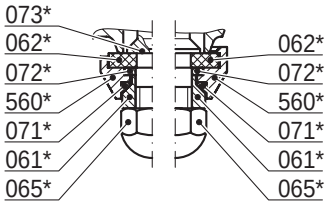
Typ 75

Typ 75.2 : Wst. / Material 1.4301
Typ 75.2 : Wst. / Material 1.4571

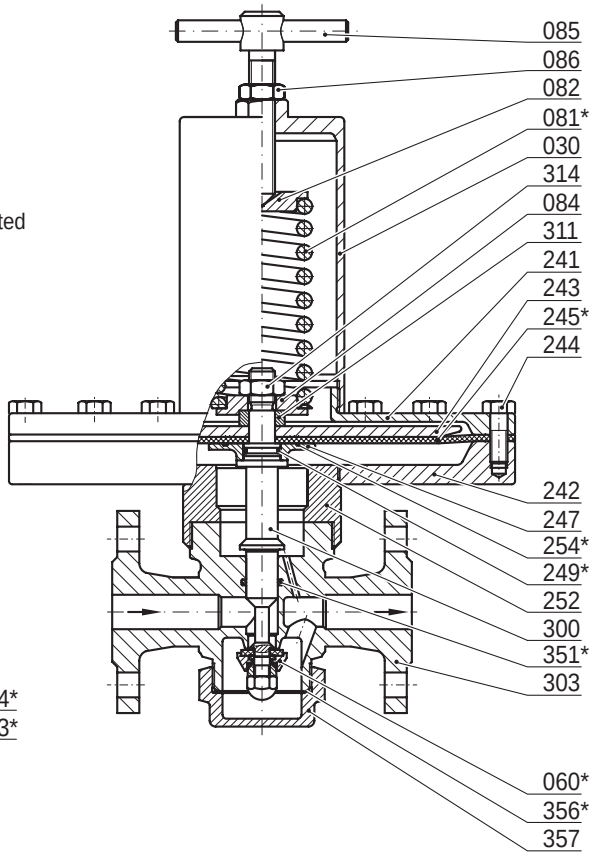
DN 10, 15, 20, 25, 32,
40, 50, 65, 80

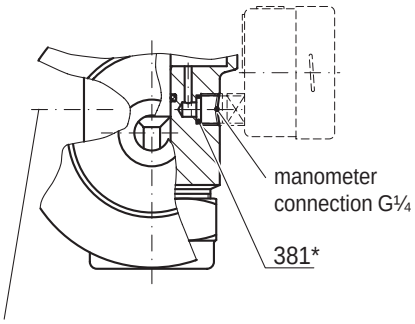


Valve with top cap
on request

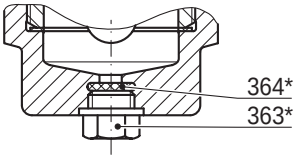


disc complete, pos. 060*
Thermoplast seated Elastomer seated





2. manometer connection G¼
standard



drainage screw
on request

Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4571	242	1 lower housing	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	243	1 upper clamp plate	1.4571	1.4571
060*	1 disc, complete			244	16 screws	A2	A2
560*	1 disc	1.4571	1.4571	245*	1 diaphragm	EPDM	EPDM
061*	1 soft sealing	1.4571	1.4571	247	1 lower clamp plate	1.4571	1.4571
062*	1 soft sealing	see techn. appendix: KWD-1		249*	1 o-ring	FPM [1]	FPM [1]
065*	1 disc bolt	A4	A4	252	1 adapter	1.4571	1.4571
071*	1 o-ring	FPM [1]	FPM [1]	254*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4571
073*	1 o-ring	FPM [1]	FPM [1]	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	351*	1 o-ring	FPM [1]	FPM [1]
084	1 springplate, lower	1.4305	1.4305	356*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4571
086	1 lock nut	A2	A2	363*	1 drainage screw	A4	A4
120	1 cap	1.4571	1.4571	364*	1 sealing ring	PTFE	PTFE
241	1 upper housing	1.4571	1.4571	381*	1 sealing ring	PTFE	PTFE

* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

1'06

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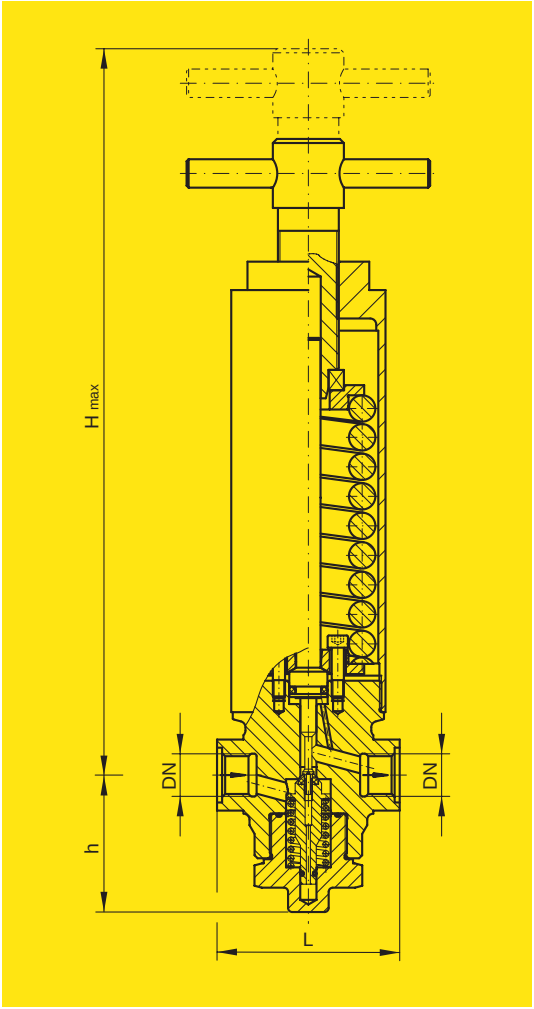
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, Hochdruckbereich
for steam, gases and liquids, high pressure range

Typ 76

Typ 76.2 : Wst. / Material 1.4571



Industrie - Ausführung / Industry - design

Vordruckunabhängig / Initial pressure independent

- Nur auf Anfrage
- only on request

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				Gewicht Weight
	DN		Vordruck * P_1 Inlet pressure * P_1 bis / to	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal maximal	L	H_{max}	h	Kvs	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[bar(g)]	[mm]	[mm]	[mm]	m^3/h	[kg]
I	15	1/2	600	15	1/2	30 / 245	90	340	68	1,2	6,5

* Einstellbereiche des Minderdruckes auf Anfrage / spring range for reduced pressure on request

** Andere Vor-/Minderdrücke und Anschlüsse auf Anfrage / other inlet-/reduced pressures and dimensions on request

1) Gewindemuffe nach DIN ISO 228, andere auf Anfrage / female screw acc. to DIN ISO 228, other on request

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Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, Hochdruckbereich
for steam, gases and liquids, high pressure range

Typ 76

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	I	
Eintr./Austr. Inlet/Outlet	DN 15 1/2	
	Einstellbereich spring range [bar(g)]	Kolbenplatte piston plate [mm]
	29 - 58 35 - 70 47 - 94 73 - 145 87 - 174	Ø 19
	41 - 82 49 - 98 67 - 133 103 - 205 123 - 245	Ø 16

größere Minderdruckbereiche auf Anfrage /
expanded reduced pressure range on request

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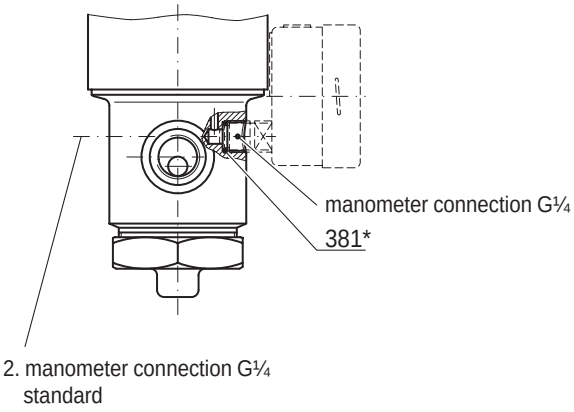
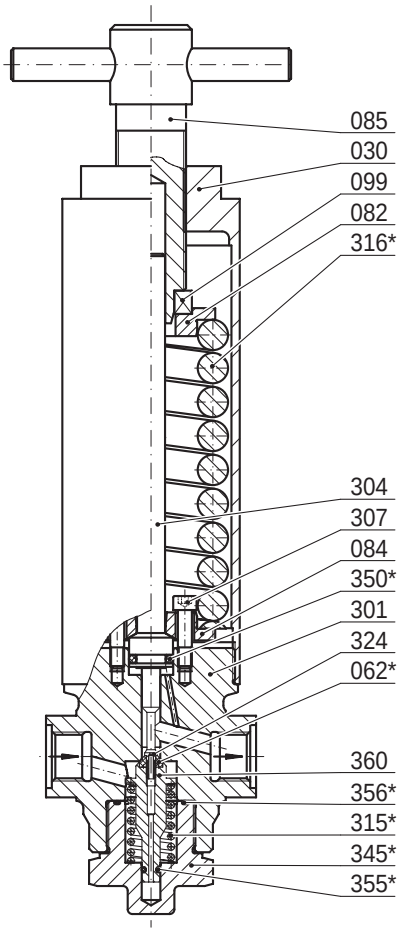
Druckminderventil, federbelastet
Pressure-Reducing-Valve, springloaded

für Dämpfe, Gase und Flüssigkeiten, Hochdruckbereich
for steam, gases and liquids, high pressure range

Typ 76

Typ 76.2 : Wst. / Material 1.4571 G 1/2





Item	Description	Material	Item	Description	Material
301	1 inlet body	1.4571	315*	1 inlet pressure spring	1.4310
030	1 spring bonnet	1.4301	316*	1 outlet pressure spring	1.4310
062*	1 soft sealing	PA6 [1)]	324	1 screw	1.4571
082	1 springplatte, upper	1.4305	345*	1 screw plug	1.4571
084	1 springplate, lower	1.4305	350*	1 o-ring	FPM [1)]
085	1 adjusting screw	1.4305	355*	1 o-ring	FPM [1)]
099	1 antifriction bearing		356*	1 sealing ring	PTFE
304	1 outlet pressure piston	1.4571	360	1 inlet pressure piston	1.4571
307	1 screw	A2	381*	1 sealing ring	PTFE

* expendable parts

[1)] other materials on request

igl 02'07

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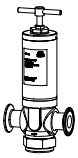
Druckminderventil, für Lebensmittel - Pharmazie
Pressure-Reducing-Valve, Food - pharmacy



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Ventil Valve	Verwendung Use	Medium	DN mm	$P_{1\,max}$ bar	P_2 bar
Typ 70 SKM*	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve	G/F	6 - 8 1/8 - 1/4	16	1,0 - 7,7
Typ 70 SKK	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve	D/G/F	8 - 15 1/4 - 1/2	63	0,35 - 20,0
Typ 70 SKS	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve	D/G/F	15 - 80 1/2 - 3	100	0,25 - 78,0
Typ 70 SKG	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve	D/G/F	65 - 100 2½ - 4	40	0,25 - 15,5
Typ 70 SMK	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve Membranventil / diaphragm valve	D/G/F	8 - 15 1/4 - 1/2	25	0,004 - 1,0
Typ 70 SMS	Edelstahl-Druckminderventil Stainless Steel-Pressure-Reducing-Valve Membranventil / diaphragm valve	D/G/F	15 - 80 1/2 - 3	25	0,004 - 1,0

Medium
- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

Vordruck / inlet pressure..... - P_1 -
Minderdruck / reduced pressure..... - P_2 -

* BG 00 nicht für Dampf / Size 00 not for steam

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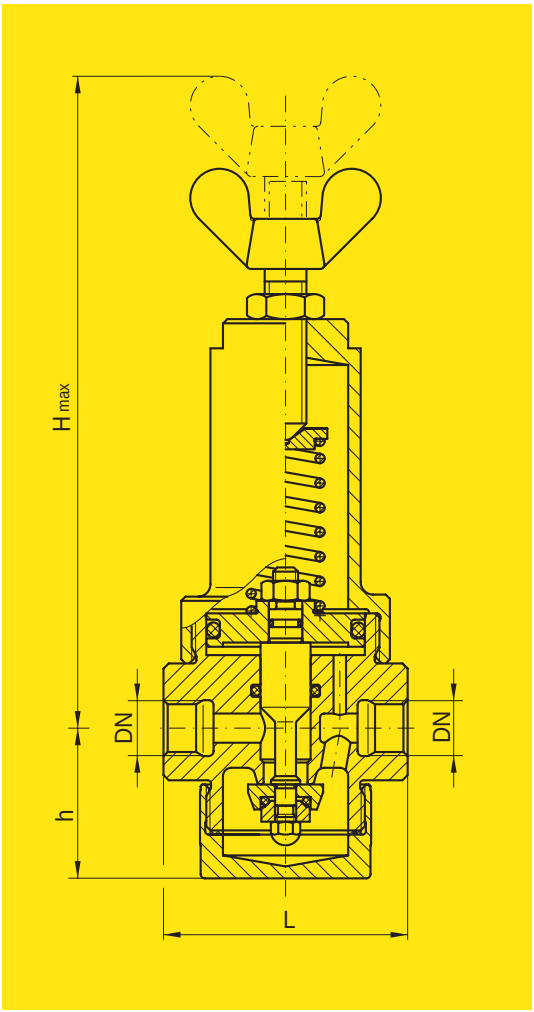
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe (*), Gase und Flüssigkeiten
for steam (*), gases and liquids

Typ 70 SKM

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design



Standard:

- Voll-Edelstahl-Ausführung
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 130°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm

Werkstoffe:

- 1.4571

Dichtungen:

- PTFE, EPDM

Optionen:

- Oberflächengüten innen und außen

Weitere Optionen siehe (O_70 SKM)

Standard:

- Full stainless steel design
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 130°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm

Materials:

- 1.4571

Sealings:

- PTFE, EPDM

Options:

- Surface quality inside and outside

Further options see (O_70 SKM)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				K_{VS} Wert
	DN		Vordruck P_1 Inlet pressure P_1 bis / to	DN		Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal / maximal	L	H_{max}	H_3	h	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[bar(g)]	[mm]	[mm]	[mm]	[mm]	[m³/h]
00	6 8	1/8 1/4	16	6 8	1/8 1/4	1,0 / 7,7	58	149	-	36	0,63

(*) Nicht für Wasserdampf / not for steam
** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SKM) / spring range for reduced pressure see over-leaf (MDT-70 SKM)
1) Gewindemuffe nach DIN ISO 228, andere auf Anfrage / female screw acc. to DIN ISO 228, other on request

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe (*), Gase und Flüssigkeiten
for steam (*), gases and liquids

Typ 70 SKM

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.
1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.
1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	00
Eintr./Austr. Inlet/Outlet	DN 6, DN 8 / 1/8, 1/4
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]
	1,00 - 1,70
	1,40 - 2,70
	1,70 - 3,30
	1,80 - 3,50
Ø 38	2,00 - 4,00
	2,40 - 4,80
	2,70 - 5,30
	2,80 - 5,60
	3,50 - 6,20
	5,00 - 7,70

größere Minderdruckbereiche auf Anfrage /
expanded reduced pressure range on request

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(*) Nicht für Wasserdampf / not for steam

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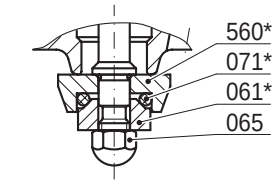
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

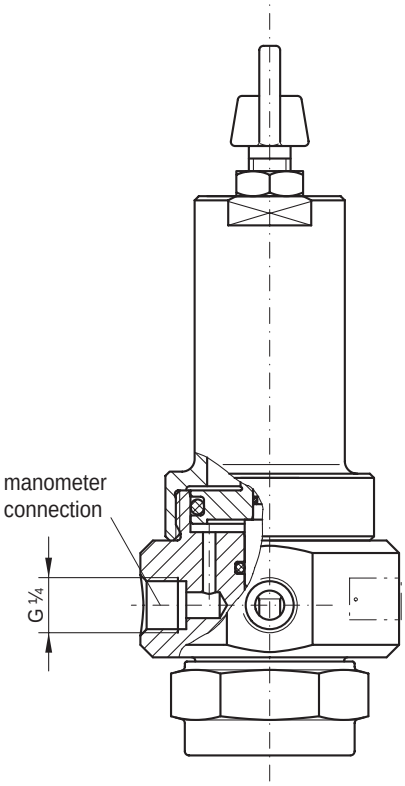
für Dämpfe (*), Gase und Flüssigkeiten
for steam (*), gases and liquids

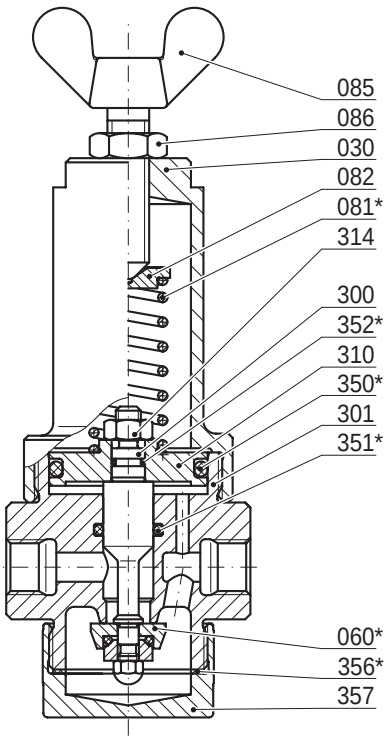
Typ 70 SKM

Typ 70.2 - SKM: Wst. / Material 1.4571 G 1/8, 1/4



disc complete, pos. 060*





Size 00

Item	Description	Material	Item	Description	Material
301	1 valve body	1.4571	086	1 lock nut	A2
030	1 spring bonnet	1.4571	300	1 piston	1.4571
060*	1 disc, complete		310	1 piston plate	1.4571
560*	1 disc	PTFE [2)]	314	1 lock nut	A2
061*	1 pressure piece	1.4571	350*	1 o-ring	EPDM[1)]
065*	1 disc bolt	A4	351*	1 o-ring	EPDM[1)]
071*	1 o-ring	EPDM [1)]	352*	1 o-ring	EPDM[1)]
081*	1 spring	1.4310	356*	1 sealing ring	PTFE
082	1 springplate, upper	1.4305	357	1 bottom plug	1.4571
085	1 adjusting screw	1.4305			

* expendable parts
(*) not for steam

[1)] other materials on request

[2)] other design: Nylon

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe (*), Gase und Flüssigkeiten
for steam (*), gases and liquids

Typ 70 SKM

Optionen / Options

BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
DA) Federhaube für Tafeleinbau einschließlich 2 Edelstahl-Befestigungsmuttern, Vierkantspindel mit abnehmbarem Isolierstoff-Handrad.	**DA)** Bonnet for panel installation including 2 stainless steel - attaching nut, square spindle with removable insulant handwheel.
FA) Durchflussgehäuse außen elektropoliert.	**FA)** Body outside electropolished.
FB) Druckminderventil komplett außen elektropoliert.	**FB)** Pressure reducing valve completely outside electropolished.
FC) Durchflussgehäuse außen glasperlengestrahlt.	**FC)** Body outside glass blasted.
FD) Druckminderventil komplett außen glasperlengestrahlt.	**FD)** Pressure reducing valve completely outside glass blasted.
FE) Druckminderventil außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FE)** Pressure reducing valve completely outside ground and polished with Ra ≤ 1,2 µm.

06 (*) Nicht für Wasserdampf / not for steam

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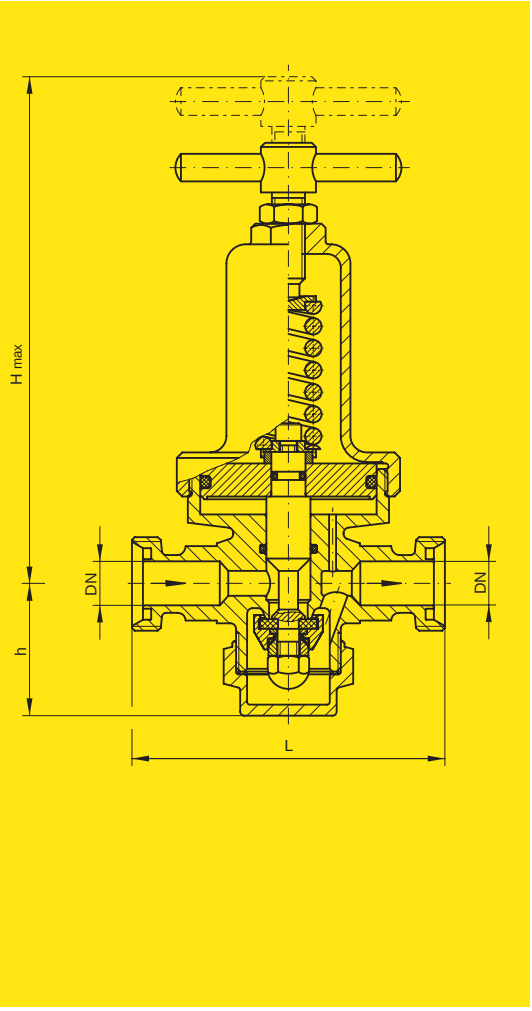
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design



andere Anschlussformen siehe (A 70 SKK)
other connections see (A 70 SKK)

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm
- Minderdrücke P_2 < 0,35 bar, siehe Baureihe SMK

Werkstoffe:

- 1.4301
- 1.4435

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_70 SKK)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm
- Reduced pressures P_2 < 0,35 bar, see series SMK

Materials:

- 1.4301
- 1.4435

Options:

- CIP able design
- Air loaded

Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_70 SKK)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				K_{VS} Wert
	DN	NPS	Vordruck P_1 Inlet pressure P_1 bis / to	DN	NPS	Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal / maximal	L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[m³/h]
0	8 10 15	1/4 3/8 1/2	63	8 10 15	1/4 3/8 1/2	0,35 / 14,4 (20,0)	siehe / see (A 70 SKK)			180	1,2 2,0 2,2

** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SKK) / spring range for reduced pressure see over-leaf (MDT-70 SKK)
() Noch möglicher Minderdruck / still possible reduced pressure

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

Bitte beachten

1. Minderdruck:

1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$

1.2 max. Vordruck siehe Typenblatt

1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.

1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:

1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$

1.2 max. Inlet pressure see main sheet

1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.

1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2

Table: spring ranges for reduced pressure P_2

BG / Size	0
Eintr./Austr.	DN 8, DN 10, DN 15
Inlet/Outlet	1/4, 3/8, 1/2
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]
	0,35 - 0,60
	0,40 - 0,90
Ø 64	0,60 - 1,30
	0,80 - 1,70
	1,00 - 2,20
	1,20 - 2,40
Ø 48	1,50 - 3,10
	1,90 - 3,90
	1,30 - 2,50
Ø 38	1,90 - 3,80
	2,50 - 5,00
	3,00 - 6,10
	2,50 - 5,00
	3,70 - 7,50
Ø 27	5,00 - 9,80
	6,00 - 12,20
	7,00 - 14,40

größere Minderdruckbereiche auf Anfrage /
expanded reduced pressure range on request

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

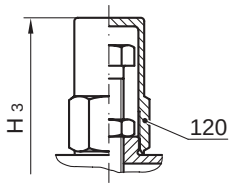
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

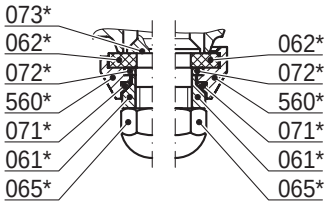
Typ 70.2 - SKK: Wst. / Material 1.4301
Typ 70.2 - SKK: Wst. / Material 1.4435

DN 8, 10, 15

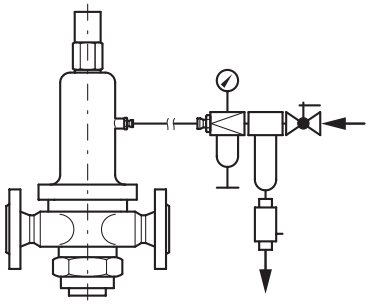
Options:



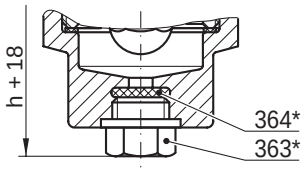
Valve with top cap
(Option AC)



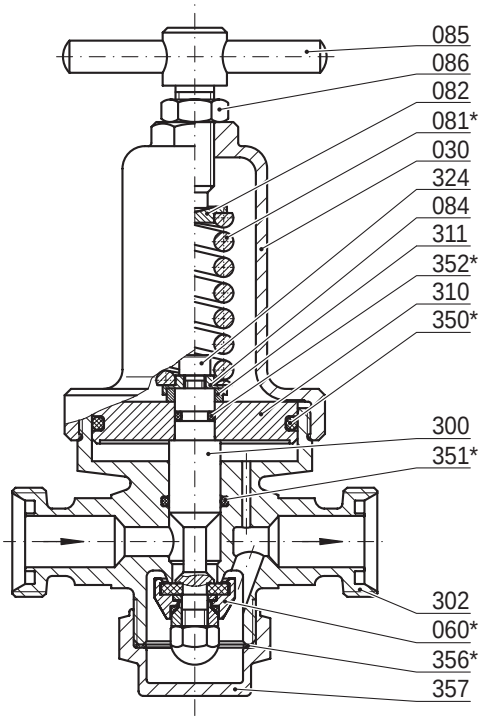
disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected reduced pressure by air loading
design of the bonnet.
(Option EA)



drainage screw
(Option AA)



Item	Description	Material		Item	Description	Material	
302	1 valve body	1.4301	1.4435 [1]	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4301	1.4581	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4404
560*	1 disc	1.4571	1.4404	310	1 piston plate	1.4571	1.4404
061*	1 pressure piece	1.4571	1.4404	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	EPDM [2]	EPDM [2]	324	1 screw	A2	A2
065*	1 disc bolt	A4	1.4404	350*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
071*	1 o-ring	EPDM	EPDM	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	EPDM	EPDM
073*	1 o-ring	EPDM	EPDM	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4404
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305				

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* expendable parts

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam
[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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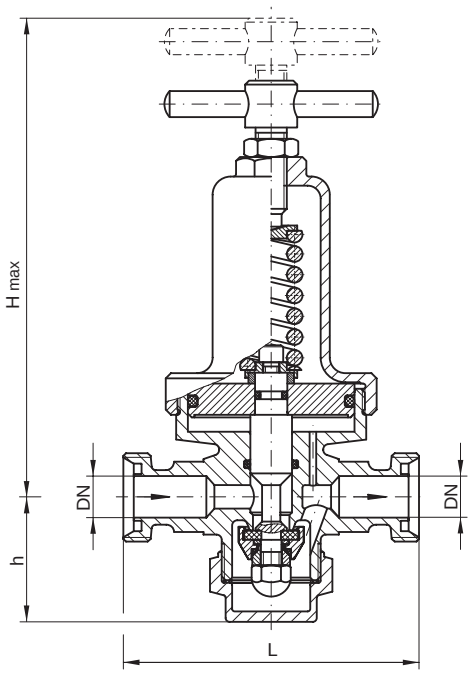
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

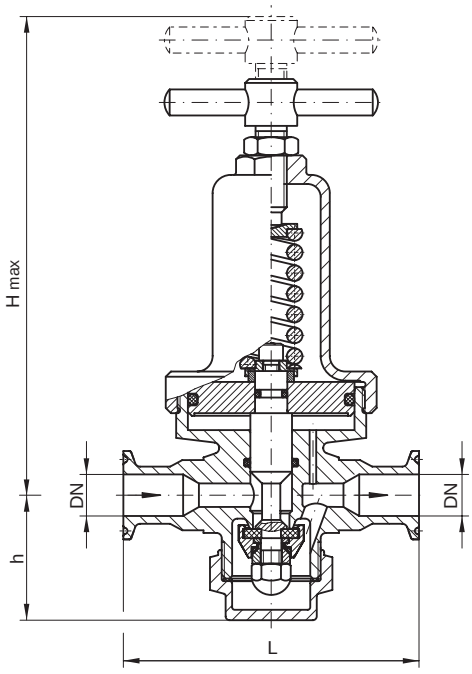
Anschlüsse / Connections



Baureihe / Series: SKK-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	Rd 28x1/8	205	48	115	2,2
	15	Rd 34x1/8	205	48	115	2,0



Baureihe / Series: SKK-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	⅜	205	48	115	2,0
	15	½	205	48	115	2,3

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

06

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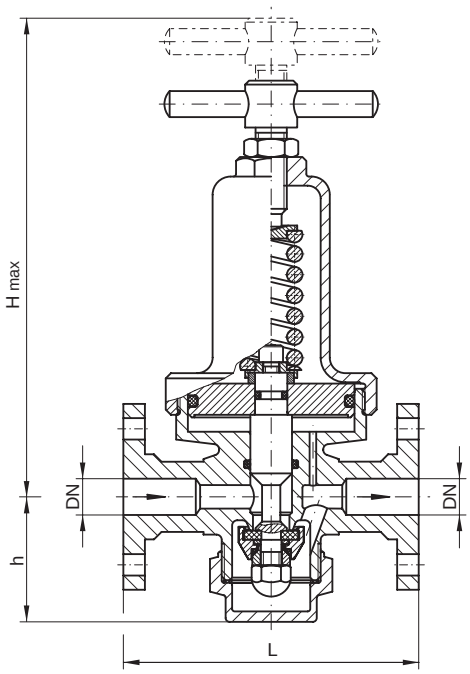
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

Anschlüsse / Connections

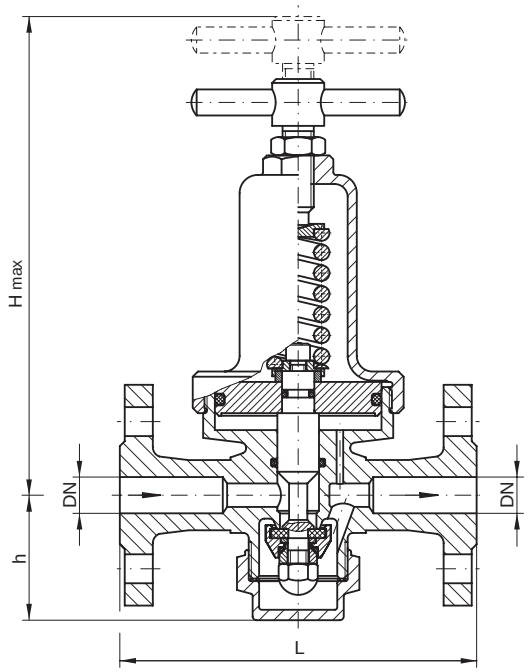


Baureihe / Series: SKK-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	⅜	205	48	115	2,5
	15	½	205	48	115	2,9

* vorzugsweise Glatt- bzw. Bundflansche am DMV.



Baureihe / Series: SKK-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L*** [mm]	Gewicht Weight [kg]
0	10	-	205	48	130	-
	15	½	205	48	130	2,9

*** Bis PN40 / Class 300 höhere Drücke auf Anfrage /
PN40 / Class 300 higher pressures on request.

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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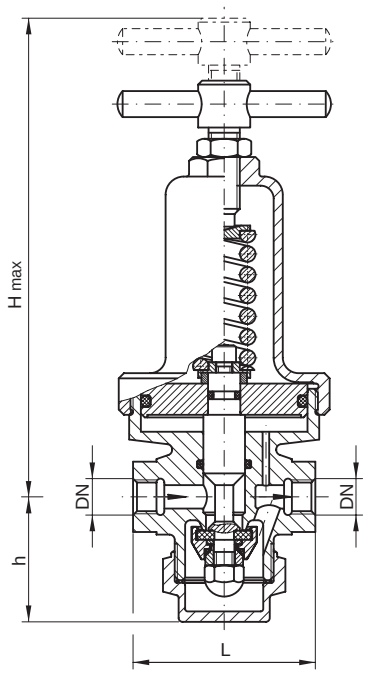
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

Anschlüsse / Connections



Baureihe / Series: SKK-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	8	¼	205	48	70	1,9
	10	⅜	205	48	70	2,1
	15	½	205	48	70	1,9

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

06

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKK

Optionen / Options

AA) Verschlusskappe zusätzlich mit Entwässerungsbohrung G ½ sowie VA - Verschlussschraube mit PTFE-Dichtung.	**AA)** Bottom cap additionally with drainage G ½ as well as SS-plug with PTFE seal.
AB) Verschlusskappe mit Entwässerungsbohrung G ½, PTFE-Dichtung sowie Entleerungs- und Probierventil Baureihe EVE-327, DN 10 mit Schlauchstutzen Ø 10 mm.	**AB)** Bottom cap with drainage G ½ . PTFE seal as well as drain- and sample valve series EVE-327, DN10 with hose connection Ø 10 mm.
AC) Druckminderventil mit Einstellschraube und Schutzkappe.	**AC)** Pressure reducing valve adjusting screw and protective cap.
AD) Entlastungsbohrung in der Federhaube.	**AD)** Relief drill hole in the spring bonnet.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
DA) Federhaube für Tafeleinbau einschließlich 2 Edelstahl-Befestigungsmuttern, Vierkantspindel mit abnehmbarem Isolierstoff-Handrad.	**DA)** Bonnet for panel installation including 2 stainless steel - attaching nut, square spindle with removable insulant handwheel.
EA) Minderdruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected reduced pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert.	**FA)** Body outside electropolished.
FB) Druckminderventil komplett außen elektropoliert.	**FB)** Pressure reducing valve completely outside electropolished.
FC) Durchflussgehäuse außen glasperlengestrahlt.	**FC)** Body outside glass blasted.
FD) Druckminderventil komplett außen glasperlengestrahlt.	**FD)** Pressure reducing valve completely outside glass blasted.
FE) Druckminderventil außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FE)** Pressure reducing valve completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm.
GB) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm.	**GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm.
GC) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm.	**GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm.
GD) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.
ZA) Nächst größere Ferderhaube BG I.	**ZA)** Next larger spring bonnet size I.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKS

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm
- Minderdrücke P_2 ≤ 0,15 / 0,25 / 0,35 bar, siehe Baureihe SMS

Werkstoffe:

- 1.4301 / 1.4571
- 1.4435 / 1.4404

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_70 SKS)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm
- Reduced pressures P_2 ≤ 0,15 / 0,25 / 0,35 bar, see series SMS

Materials:

- 1.4301 / 1.4571
- 1.4435 / 1.4404

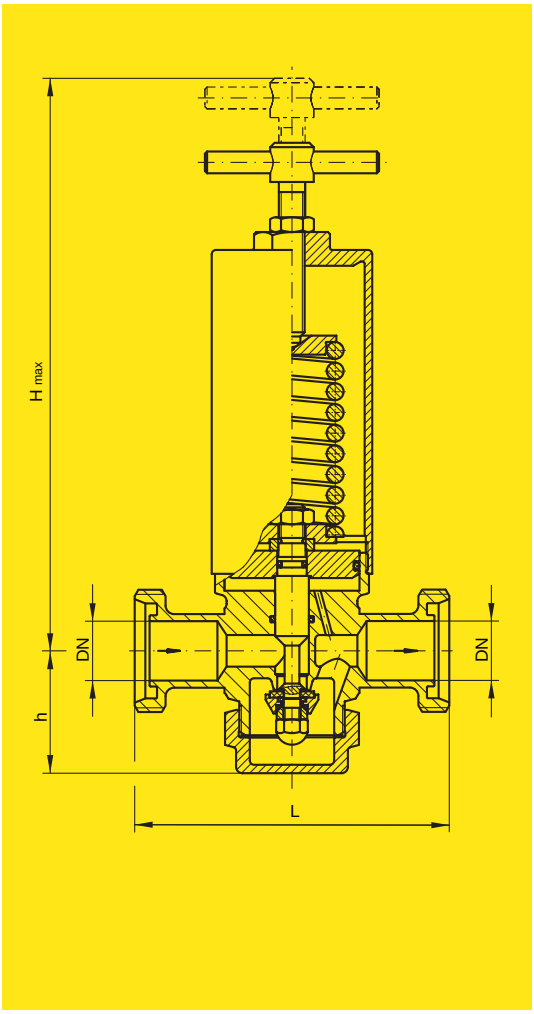
Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

Options:

- CIP able design
- Air loaded
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_70 SKS)



andere Anschlussformen siehe (A 70 SKS)
other connections see (A 70 SKS)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				K_{VS} Wert
	DN	NPS	Vordruck P_1 Inlet pressure P_1 bis / to	DN	NPS	Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal / maximal	L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[m³/h]
I	15 20 25 (S) 32 (S)	1/2 3/4 1 (S) 1¼ (S)	100 63 63 40	15 20 25 (S) 32 (S)	1/2 3/4 1 (S) 1¼ (S)	0,35 / 52,0 (78,0)	siehe / see (A 70 SKS)			250	3,0 3,2 3,5 3,6
II	25 (G) 32 (G) 40 (S) 50 (S) 65 (S)	1 (G) 1¼ (G) 1½ (S) 2 (S) 2½ (S)	63	25 (G) 32 (G) 40 (S) 50 (S) 65 (S)	1 (G) 1¼ (G) 1½ (S) 2 (S) 2½ (S)	0,25 / 23,0 (31,0)				265	6,3 6,5 6,7 7,0 7,2
III [1]	40 (G) 50 (G) 65 (G) 80 (S)	1½ (G) 2 (G) 2½ (G) 3 (S)	63 40 40 40	40 (G) 50 (G) 65 (G) 80 (S)	1½ (G) 2 (G) 2½ (G) 3 (S)	0,25 / 18,8 (21,0)				305	12,5 13,0 13,5 13,7
III B [1]	50 (G) 65 (G) 80 (G)	2 (G) 2½ (G) 3 (G)	40	50 (G) 65 (G) 80 (G)	2 (G) 2½ (G) 3 (G)	0,25 / 12,0 (15,5)				520	27,5 28,0 28,5

** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SKS) / spring range for reduced pressure see over-leaf (MDT-70 SKS)

() Noch möglicher Minderdruck / still possible reduced pressure

1) Nur in Werkstoff-Ausführung 1.4435 / only material-design 1.4435

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Edelstahl-Druckminderventil
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für Dämpfe, Gase und Flüssigkeiten
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Typ 70 SKS

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.

1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.

1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	I	II	III	III B
Eintr./Austr.	DN 15, 20, 25, 32	DN 25, 32, 40, 50, 65	DN 40, 50, 65, 80	DN 50, 65, 80
Inlet/Outlet	1/2, 3/4, 1, 1¼	1, 1¼, 1½, 2, 2½	1½, 2, 2½, 3	2, 2½, 3
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]			
				0,25 - 0,44
				0,35 - 0,73
Ø 119				0,50 - 1,10
				0,80 - 1,65
				1,30 - 2,65
				1,90 - 3,85
			0,25 - 0,47	0,80 - 1,60
Ø 99			0,36 - 0,72	1,20 - 2,40
			0,57 - 1,15	1,90 - 3,80
			1,00 - 2,00	2,80 - 5,60
		0,25 - 0,50	0,80 - 1,60	2,60 - 5,30
		0,40 - 0,83	1,40 - 2,80	3,80 - 7,70
Ø 84		0,65 - 1,30	1,60 - 3,20	4,50 - 9,10
		1,00 - 2,00		6,00 - 12,00
		1,40 - 2,80		
	0,35 - 0,54	1,70 - 3,50	1,40 - 2,80	
	0,50 - 0,94	2,40 - 4,80	2,40 - 4,80	
Ø 64	0,70 - 1,50	3,00 - 6,10	2,70 - 5,40	
	1,00 - 2,40		3,50 - 6,90	
	1,80 - 3,80			
	2,60 - 5,30			
	3,30 - 6,70	3,00 - 6,10	4,20 - 8,50	
Ø 48	4,70 - 9,50	4,30 - 8,60	4,80 - 9,60	
	6,00 - 12,20	5,50 - 11,00	6,50 - 12,30	
		7,50 - 14,50	9,50 - 18,80	
	5,40 - 10,70	5,00 - 9,80		
Ø 38	7,50 - 15,00	7,00 - 13,80		
	10,00 - 19,50	9,00 - 17,50		
	13,00 - 26,00	12,00 - 23,00		
	11,00 - 21,00			
	15,00 - 30,00			
Ø 27	20,00 - 38,00			
	26,00 - 52,00			

größere Minderdruckbereiche auf Anfrage / expanded reduced pressure range on request

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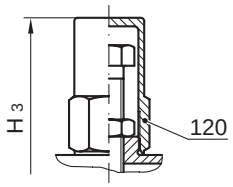
Typ 70 SKS

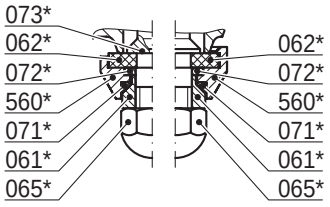
Typ 70.2 - SKS: Wst. / Material 1.4301
Typ 70.2 - SKS: Wst. / Material 1.4435

DN 15, 20, 25, 32, 40, 50, 65, 80

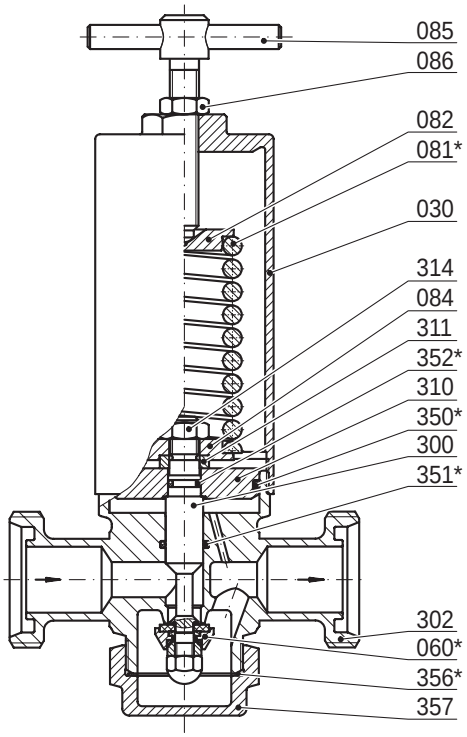
Options:

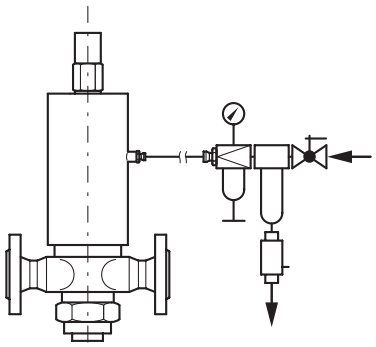


Valve with top cap
(Option AC)

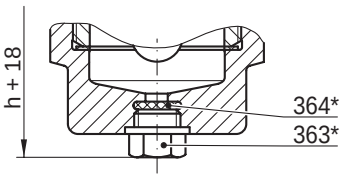


disc complete, pos. 060*
Thermoplast seated Elastomer seated





selected reduced pressure by air loading
design of the bonnet.
(Option EA)



drainage screw
(Option AA)

Item	Description	Material		Item	Description	Material	
302	1 valve body	1.4301	1.4435 [1]	086	1 lock nut	A2	A2
030	1 spring bonnet	1.4301	1.4301	120	1 cap	1.4571	1.4571
060*	1 disc, complete			300	1 piston	1.4571	1.4404
560*	1 disc	1.4571	1.4404	310	1 piston plate	1.4571	1.4404
061*	1 pressure piece	1.4571	1.4404	311	1 distance bush	1.4305	1.4305
062*	1 soft sealing	EPDM [2]	EPDM [2]	314	1 screw	A2	A2
065*	1 disc bolt	A4	1.4404	350*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
071*	1 o-ring	EPDM	EPDM	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
072*	1 locking ring	1.4571	1.4571	352*	1 o-ring	EPDM	EPDM
073*	1 o-ring	EPDM	EPDM	356*	1 sealing ring	PTFE	PTFE
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4404
082	1 springplate, upper	1.4305	1.4305	363*	1 drainage screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	364*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305				

I 01'06

* expendable parts
size III + III B only material-design 1.4435

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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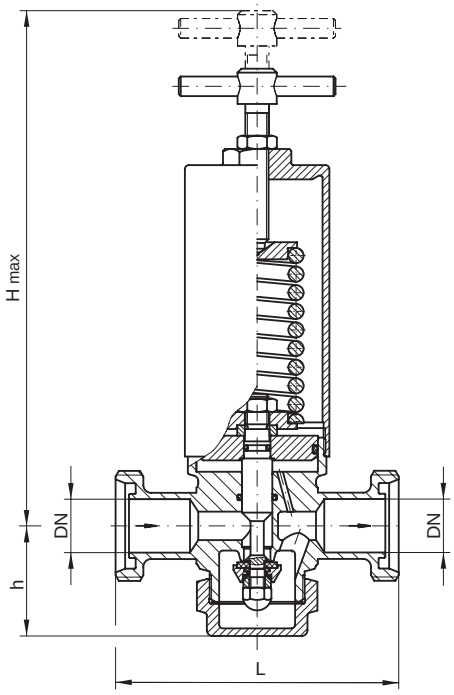
Typ 70 SKS

Anschlüsse / Connections

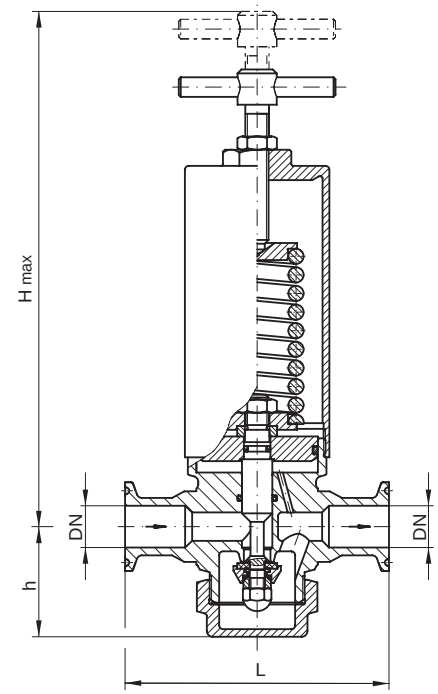


Baureihe / Series: SKS-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	Rd 34x1/8	275	58	129	3,9
	20	Rd 44x1/6	275	58	135	3,9
	25 (S)	Rd 52x1/6	275	58	145	4,0
	32* (S)	Rd 58x1/6	275	58	145	-
II	25 (G)	Rd 52x1/6	300	68	160	5,4
	32 (G)	Rd 58x1/6	300	68	166	5,8
	40 (S)	Rd 65x1/6	300	68	168	6,0
	50 (S)	Rd 78x1/6	300	68	170	5,8
	65* (S)	Rd 95x1/6	300	68	175	-
III	40 (G)	Rd 65x1/6	325	85	208	10,5
	50 (G)	Rd 78x1/6	325	85	212	11,0
	65 (G)	Rd 95x1/6	325	85	222	9,8
	80* (S)	Rd 110x1/4	325	85	235	-
III B	50 (G)	Rd 78x1/6	540	145	270	-
	65 (G)	Rd 95x1/6	540	145	280	29,0
	80 (G)	Rd 110x1/4	540	145	290	30,0

* Gilt nur für DIN 11851 / only for DIN 11851



Baureihe / Series: SKS-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	275	58	120	3,8
	20	¾	275	58	120	3,8
	25 (S)	1 (S)	275	58	130	4,0
II	25 (G)	1 (G)	300	68	145	5,5
	32	1¼	300	68	145	5,9
	40 (S)	1½ (S)	300	68	145	5,7
	50 (S)	2 (S)	300	68	145	5,3
III	40 (G)	1½ (G)	325	85	180	9,8
	50 (G)	2 (G)	325	85	180	-
	65 (S)	2½ (S)	325	85	180	-
III B	50 (G)	2 (G)	540	145	260	28,0
	65 (G)	2½ (G)	540	145	260	-
	80	3	540	145	260	29,0

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

06

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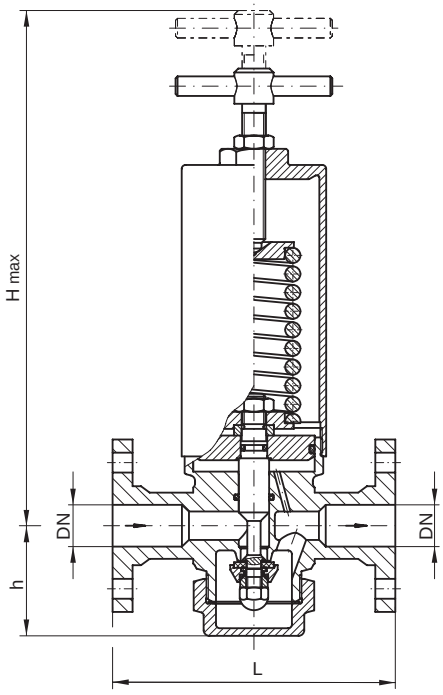
Typ 70 SKS

Anschlüsse / Connections

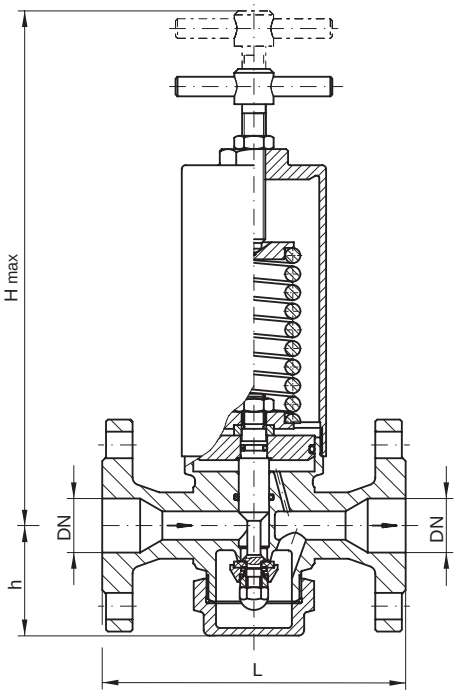


Baureihe / Series: SKS-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	275	58	135	-
	20	¾	275	58	135	-
	25 (S)	1 (S)	275	58	135	4,3
II	25 (G)	1 (G)	300	68	150	5,6
	32	1¼	300	68	150	-
	40 (S)	1½ (S)	300	68	150	6,6
	50 (S)	2 (S)	300	68	150	-
III	40 (G)	1½ (G)	325	85	190	10,9
	50 (G)	2 (G)	325	85	190	10,2
	65 (S)	2½ (S)	325	85	190	12,0
III B	50 (G)	2 (G)	540	145	260	29,0
	65 (G)	2½ (G)	540	145	260	31,0
	80	3	540	145	260	-

* vorzugsweise Glatt- bzw. Bundflansche am DMV.



Baureihe / Series: SKS-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L*** [mm]	Gewicht Weight [kg]
I	15	½	275	58	130	5,5
	20	¾	275	58	150	5,5
	25 (S)	1 (S)	275	58	160	6,1
II	25 (G)	1 (G)	300	68	160	7,7
	32	1¼	300	68	180	9,0
	40 (S)	1½ (S)	300	68	200	8,9
	50 (S)	2 (S)	300	68	230	-
	65 (S)	2½ (S)	300	68	290	-
III	40 (G)	1½ (G)	325	85	200	13,0
	50 (G)	2 (G)	325	85	230	14,0
	65 (G)	2½ (G)	325	85	290	17,2
	80 (S)	3 (S)	325	85	310	-
III B	50 (G)	2 (G)	540	145	300	35,0
	65 (G)	2½ (G)	540	145	290	-
	80 (G)	3 (G)	540	145	310	37,0

*** Bis PN40 / Class 300 höhere Drücke auf Anfrage /
PN40 / Class 300 higher pressures on request.

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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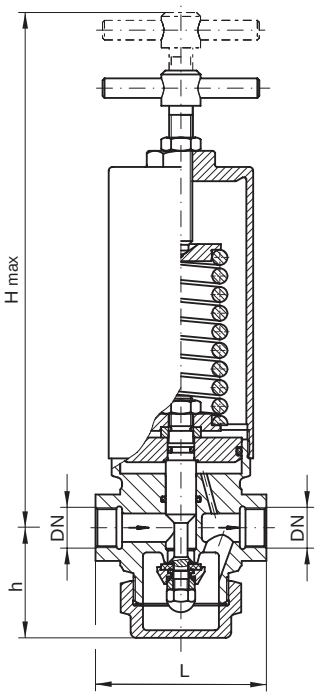
Anschlüsse / Connections



Baureihe / Series: SKS-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	275	58	90	4,0
	20	¾	275	58	90	4,0
	25 (S)	1 (S)	275	58	135	4,1
	32 (S)	1¼ (S)	275	58	140	-
II	25 (G)	1 (G)	300	68	105	5,0
	32 (G)	1¼ (G)	300	68	105	5,4
	40 (S)	1½ (S)	300	68	155	5,5
	50 (S)	2 (S)	300	68	185	6,5
III	40 (G)	1½ (G)	325	85	145	9,4
	50 (G)	2 (G)	325	85	145	9,6
	65 (S)	2½ (S)	325	85	210	11,2
III B	50 (G)	2 (G)	540	145	220	-
	65 (G)	2½ (G)	540	145	220	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKS

Optionen / Options

AA) Verschlusskappe zusätzlich mit Entwässerungsbohrung G ½ sowie VA - Verschlussschraube mit PTFE-Dichtung.	**AA)** Bottom cap additionally with drainage G ½ as well as SS-plug with PTFE seal.
AB) Verschlusskappe mit Entwässerungsbohrung G ½, PTFE-Dichtung sowie Entleerungs- und Probierventil Baureihe EVE-327, DN 10 mit Schlauchstutzen Ø 10 mm.	**AB)** Bottom cap with drainage G ½ . PTFE seal as well as drain- and sample valve series EVE-327, DN10 with hose connection Ø 10 mm.
AC) Druckminderventil mit Einstellschraube und Schutzkappe.	**AC)** Pressure reducing valve adjusting screw and protective cap.
AD) Entlastungsbohrung in der Federhaube.	**AD)** Relief drill hole in the spring bonnet.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
DA) Federhaube für Tafeleinbau einschließlich 2 Edelstahl-Befestigungsmuttern, Vierkantspindel mit abnehmbarem Isolierstoff-Handrad.	**DA)** Bonnet for panel installation including 2 stainless steel - attaching nut, square spindle with removable insulant handwheel.
EA) Minderdruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected reduced pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert.	**FA)** Body outside electropolished.
FB) Druckminderventil komplett außen elektropoliert.	**FB)** Pressure reducing valve completely outside electropolished.
FC) Durchflussgehäuse außen glasperlengestrahlt.	**FC)** Body outside glass blasted.
FD) Druckminderventil komplett außen glasperlengestrahlt.	**FD)** Pressure reducing valve completely outside glass blasted.
FE) Druckminderventil außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FE)** Pressure reducing valve completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm.
GB) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm.	**GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm.
GC) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm.	**GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm.
GD) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKG

Standard:
- Voll-Edelstahl-Ausführung
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 140°C

Werkstoffe:
- 1.4581

Dichtungen:
- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

Optionen:
- Pneumatische Auflastung
- Dichtungen mit FDA-Zulassung
- Oberflächengüten innen und außen

Weitere Optionen siehe (O_70 SKG)

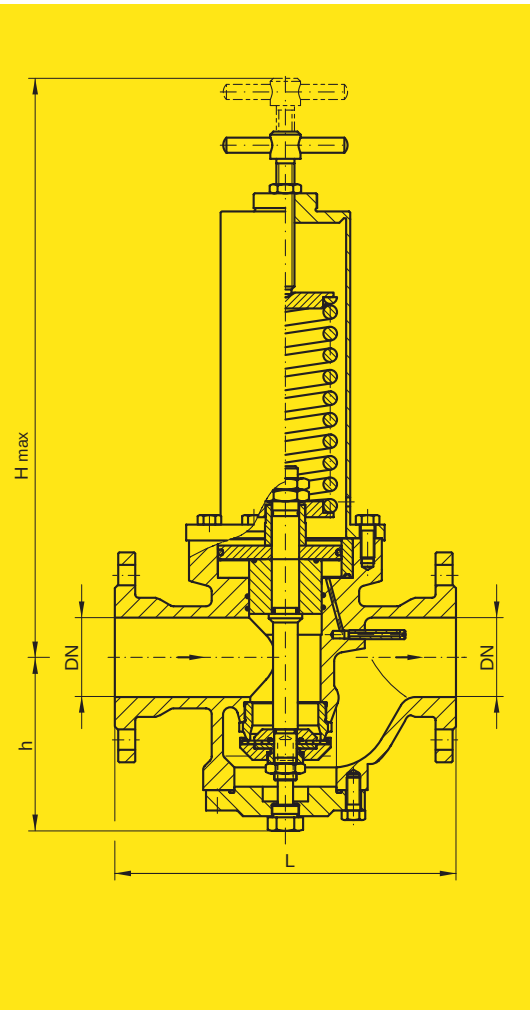
Standard:
- Full stainless steel design
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 140°C

Materials:
- 1.4581

Sealings:
- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

Options:
- Air loaded
- Seals with FDA-Certificate
- Surface quality inside and outside

Further options see (O_70 SKG)



andere Anschlussformen siehe (A 70 SKG)
other connections see (A 70 SKG)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions				K_{VS} Wert
	DN	NPS	Vordruck P_1 Inlet pressure P_1 bis / to	DN	NPS	Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal / maximal	L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[m³/h]
IV	65 80 100	2½ 3 4	40	65 80 100	2½ 3 4	0,25 / 12,0 (15,5)	siehe / see (A 70 SKG)			530	48 50 53

** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SKG) / spring range for reduced pressure see over-leaf (MDT-70 SKG)
() Noch möglicher Minderdruck / still possible reduced pressure

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for steam, gases and liquids

Typ 70 SKG

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.

1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.

1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

BG / Size	IV
Eintr./Austr.	DN 65, 80, 100
Inlet/Outlet	2½, 3, 4
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]
	0,25 - 0,55
	0,40 - 0,80
Ø 139	0,60 - 1,20
	0,90 - 1,95
	1,40 - 2,85
	1,90 - 3,80
Ø 99	2,80 - 5,60
	3,30 - 6,60
	3,80 - 7,70
Ø 84	4,50 - 9,10
	6,00 - 12,00

größere Minderdruckbereiche auf Anfrage /
expanded reduced pressure range on request

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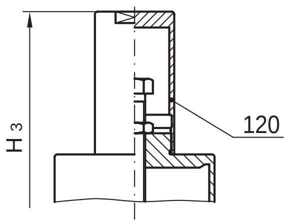
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

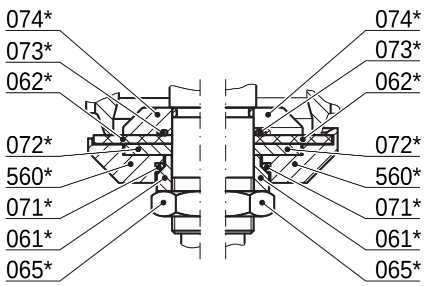
Typ 70 SKG

Typ 70.2 - SKG: Wst. / Material 1.4581 DN 65, 80, 100

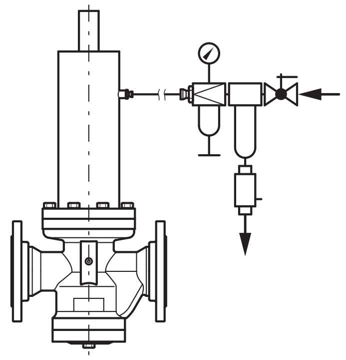
Options:



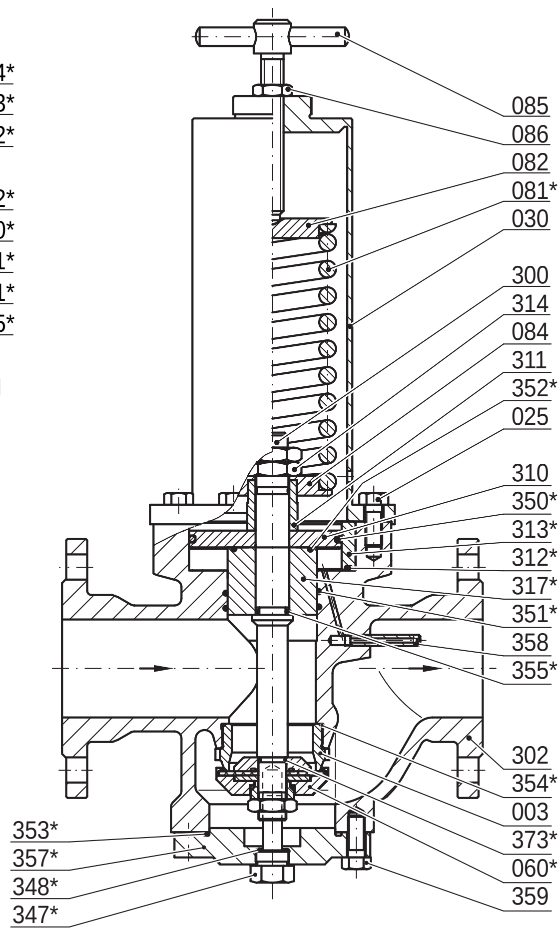
Valve with top cap
(Option AC)



disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected reduced pressure by air loading
design of the bonnet.
(Option EA)



Item	Description	Material	Item	Description	Material
302	1 valve body	1.4581	300	1 piston	1.4571
003	1 seat	1.4571	310	1 piston plate	1.4571
025	8 screws	A4	311	1 distance bush	1.4305
030	1 spring bonnet	1.4301	312*	1 o-ring	EPDM
060*	1 disc, complete		313*	1 piston plate ring	1.4571
560*	1 disc	1.4571	314	2 lock nut	A2
061*	1 pressure piece	1.4571	317*	1 piston guide	1.4571
062*	1 soft sealing	EPDM 2)	347*	1 piston guide screw	1.4571
065*	1 disc bolt	A4	348*	1 o-ring	EPDM 3) 4)
071*	1 o-ring	EPDM	350*	1 o-ring	EPDM 3) 4)
072*	1 locking ring	1.4571	351*	2 o-ring	EPDM 3) 4)
073*	1 o-ring	EPDM	352*	1 o-ring	EPDM 3) 4)
074*	1 disc plate	1.4571	353*	1 o-ring	EPDM 3) 4)
081*	1 spring	1.4310	354*	1 o-ring	EPDM
082	1 springplate, upper	1.4305	355*	1 o-ring	EPDM 3) 4)
084	1 springplate, lower	1.4305	357*	1 bottom plug	1.4571
085	1 adjusting screw	1.4305	358	1 suction tube	A4
086	1 lock nut	A2	359	8 screw	A2
120	1 cap	1.4571	373*	1 o-ring	EPDM

jl 04'07

* expendable parts

2) PTFE at steam

3) EPDM at steam up to 150°C

4) AF100 at steam up to 200°C

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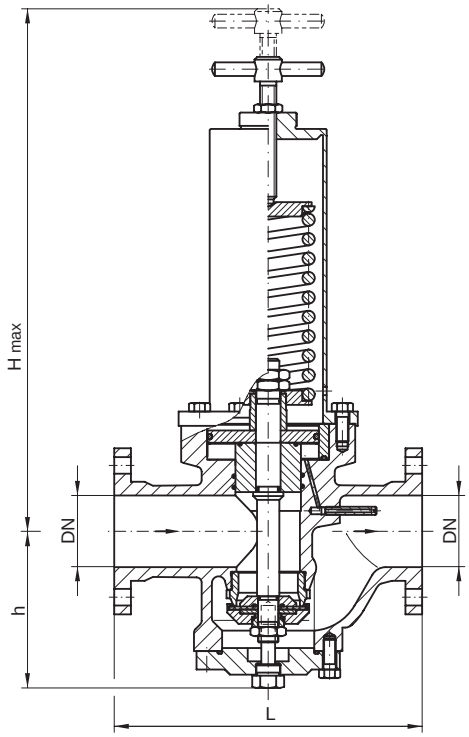
for steam, gases and liquids

Typ 70 SKG

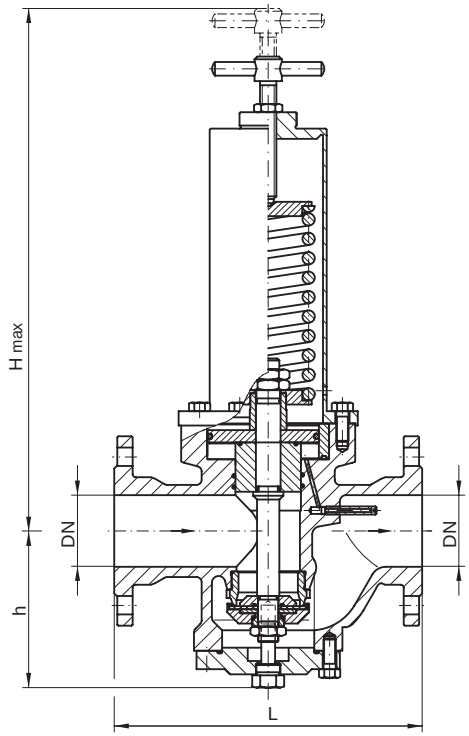
Anschlüsse / Connections



Baureihe / Series: SKG-F (...)

Kleinflansch / flange
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
IV	65	2½	545	155	290	35,5
	80	3	545	155	310	35,1
	100	4	545	155	350	-



Baureihe / Series: SKG-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
IV	65	2½	545	155	290	40,0
	80	3	545	155	310	43,0
	100	4	545	155	350	53,0

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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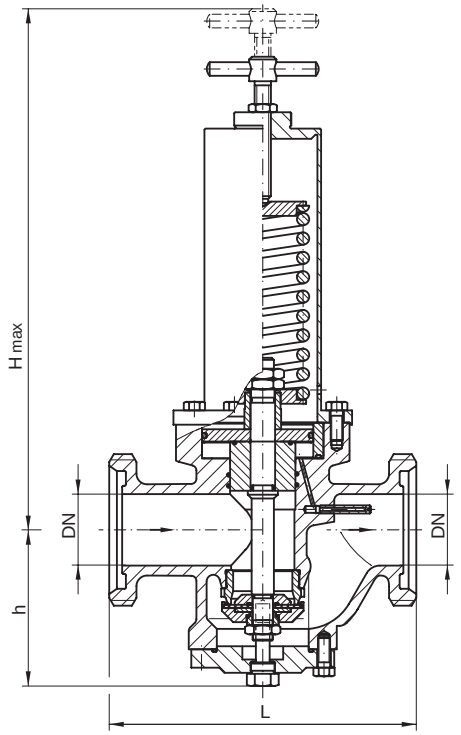
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKG

Anschlüsse / Connections



Baureihe / Series: SKG-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
IV	65	Rd 95x1/6	545	155	290	34,8
	80	Rd 110x1/4	545	155	310	-
	100	Rd 130x1/4	545	155	360	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SKG

Optionen / Options

AC)	Druckminderventil mit Einstellschraube und Schutzkappe.
AD)	Entlastungsbohrung in der Federhaube.

AC)	Pressure reducing valve adjusting screw and protective cap.
AD)	Relief drill hole in the spring bonnet.

BA)	Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.
BB)	Gehäuse beiderseits ohne Manometerbohrung G ¼.

BA)	Body with one pressure gauge connection G ¼ on indicated position.
BB)	Body on both sides without pressure gauge connection G ¼.

CA)	FDA - Zulassung für die Dichtungen.

CA)	FDA - Certificate for the seals.

EA)	Minderdruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.

EA)	Adjustable selected reduced pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.

FA)	Durchflussgehäuse außen elektropoliert.
FB)	Druckminderventil komplett außen elektropoliert.
FC)	Durchflussgehäuse außen glasperlengestrahlt.
FD)	Druckminderventil komplett außen glasperlengestrahlt.

FA)	Body outside electropolished.
FB)	Pressure reducing valve completely outside electropolished.
FC)	Body outside glass blasted.
FD)	Pressure reducing valve completely outside glass blasted.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMK

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Membransteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm

Werkstoffe:

- 1.4301
- 1.4435

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_70 SMK)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Diaphragm control
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm

Materials:

- 1.4301
- 1.4435

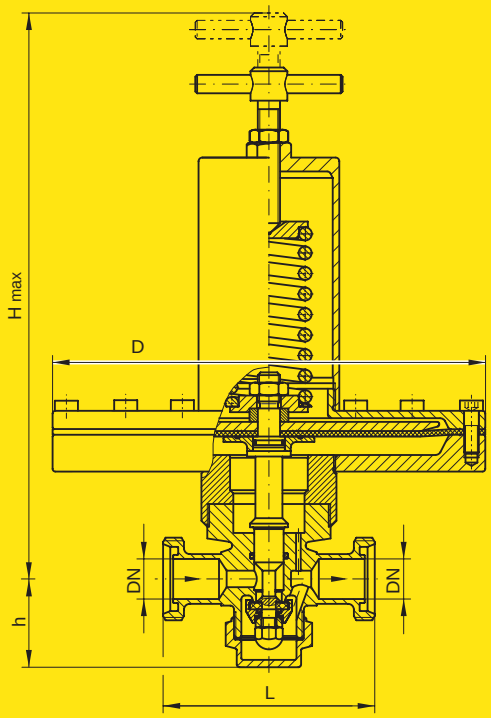
Options:

- CIP able design
- Air loaded

Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_70 SMK)



andere Anschlussformen siehe (A 70 SMK)
other connections see (A 70 SMK)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions								K_{VS} Wert
	DN	NPS	Vordruck P_1 Inlet pressure P_1 bis / to	DN	NPS	Minderdruckbereich** P_2 Reduced pressure range** P_2 minimal maximal	Membran- D diaphragm- D Ausführung/Design				L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m³/h]
0	8 10 15	1/4 3/8 1/2	25	8 10 15	1/4 3/8 1/2	0,004 / 0,96 (1,0)	405	310	235	190	siehe / see (A 70 SMK)			280	1,2 2,0 2,2

** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SMK) / spring range for reduced pressure see over-leaf (MDT-70 SMK)
() Noch möglicher Minderdruck / still possible reduced pressure

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for steam, gases and liquids

Typ 70 SMK

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.

1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.

1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

Baugröße / Size	0
Eintr./Austr.	DN 8, DN 10, DN 15
Inlet/Outlet	1/4, 3/8, 1/2
Membran diaphragm [mm]	
	0,004 - 0,0075
	0,006 - 0,013
Ø 405	0,011 - 0,022
	0,02 - 0,04
	0,033 - 0,065
	0,015 - 0,026
	0,025 - 0,045
Ø 310	0,04 - 0,08
	0,06 - 0,13
	0,05 - 0,06
	0,05 - 0,10
Ø 235	0,09 - 0,18
	0,15 - 0,30
	0,10 - 0,21
	0,18 - 0,37
Ø 190	0,30 - 0,61
	0,50 - 0,96

größere Minderdruckbereiche auf Anfrage /
expanded reduced pressure range on request

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

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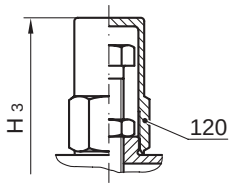
for steam, gases and liquids

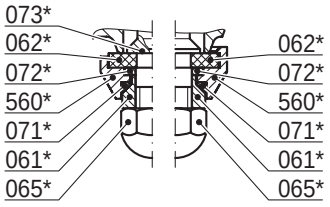
Typ 70 SMK

Typ 70.2 - SMK: Wst. / Material 1.4301 DN 8, 10, 15
Typ 70.2 - SMK: Wst. / Material 1.4435

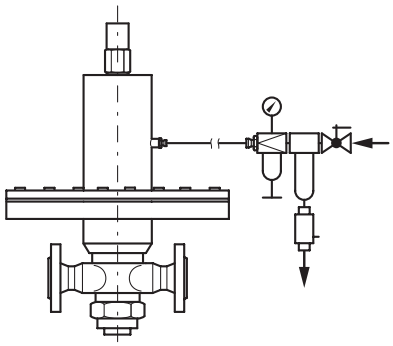
Options:



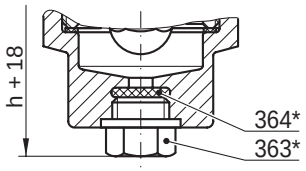
Valve with top cap
(Option AC)



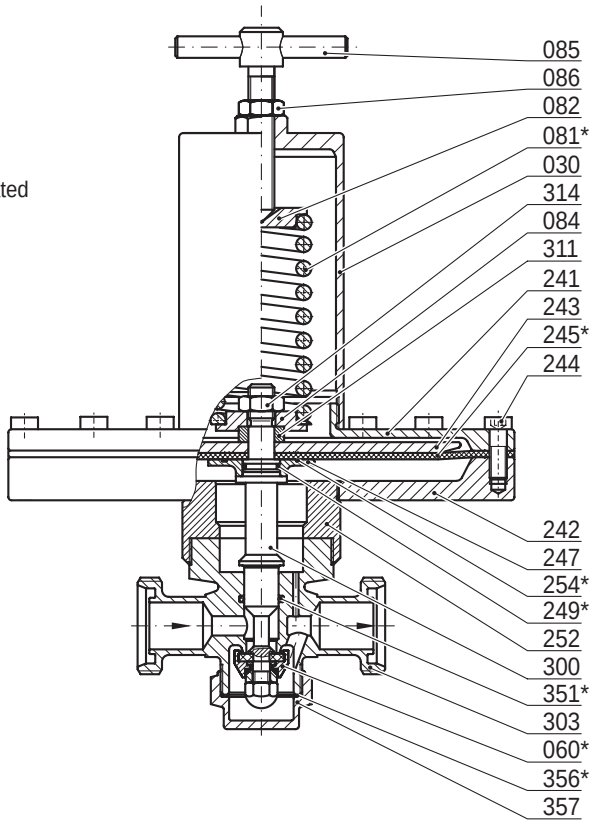
disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected reduced pressure by air loading
design of the bonnet.
(Option EA)



drainage screw
(Option AA)



Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4435 [1]	242	1 lower housing	1.4571	1.4404
030	1 spring bonnet	1.4301	1.4301	243	1 upper clamp plate	1.4571	1.4571
060*	1 disc, complete			244	16 screws	A2	A2
560*	1 disc	1.4571	1.4404	245*	1 diaphragm	EPDM	EPDM
061*	1 pressure piece	1.4571	1.4404	247	1 lower clamp plate	1.4571	1.4404
062*	1 soft sealing	EPDM [2]	EPDM [2]	249*	1 o-ring	EPDM	EPDM
065*	1 disc bolt	A4	1,4404	252	1 adapter	1.4571	1.4404
071*	1 o-ring	EPDM	EPDM	254*	1 o-ring	EPDM	EPDM
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4404
073*	1 o-ring	EPDM	EPDM	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
084	1 springplate, lower	1.4305	1.4305	356*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4404
086	1 lock nut	A2	A2	363*	1 drainage screw	A4	A4
120	1 cap	1.4571	1.4571	364*	1 sealing ring	PTFE	PTFE
241	1 upper housing	1.4571	1.4404				

* expendable parts

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam
[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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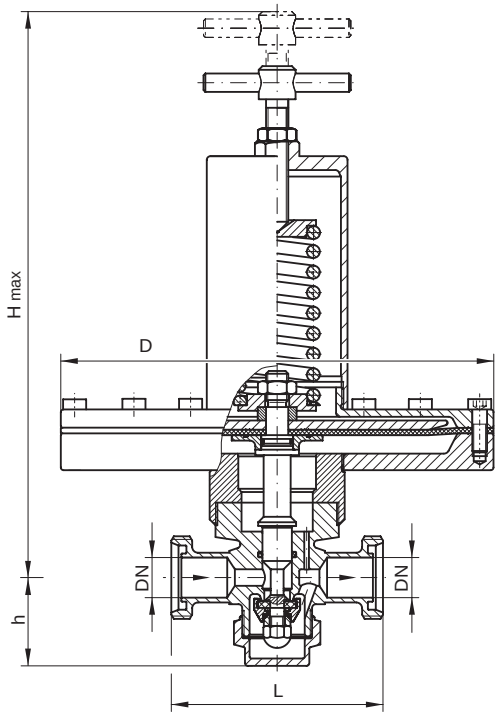
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMK

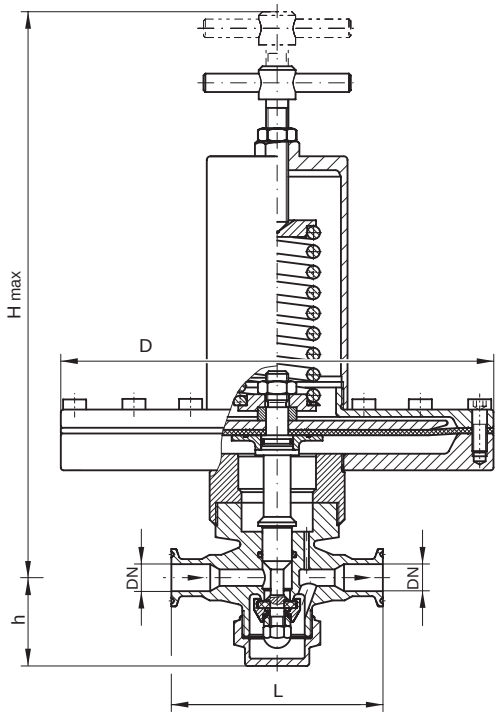
Anschlüsse / Connections



Baureihe / Series: SMK-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	Rd 28x1/8	320	48	115	-	-	-	-
	15	Rd 34x1/8	320	48	115	-	-	-	-



Baureihe / Series: SMK-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	⅜	320	48	115	-	-	-	-
	15	½	320	48	115	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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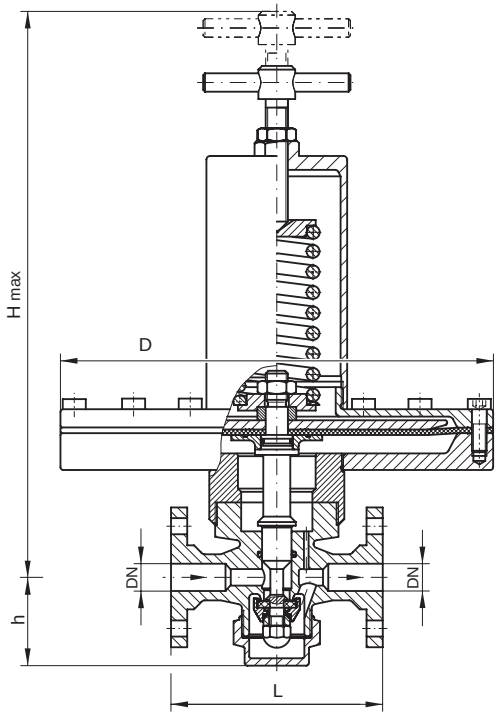
Typ 70 SMK

Anschlüsse / Connections

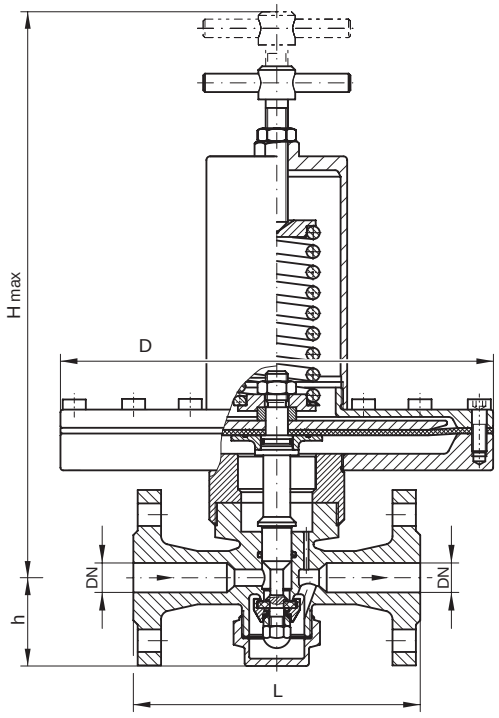


Baureihe / Series: SMK-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	⅜	320	48	115	-	-	-	-
	15	½	320	48	115	-	-	-	-

* vorzugsweise Glatt- bzw. Bundflansche am DMV.



Baureihe / Series: SMK-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	-	320	48	130	-	-	-	-
	15	½	320	48	130	-	-	-	10,0

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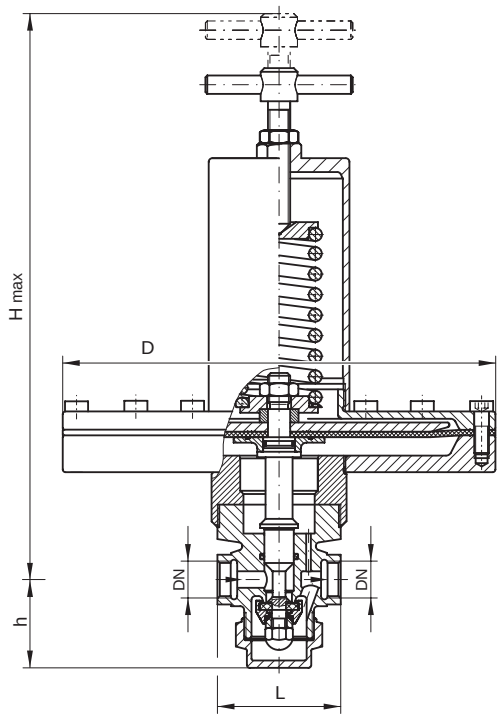
for steam, gases and liquids

Typ 70 SMK

Anschlüsse / Connections



Baureihe / Series: SMK-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	8	¼	320	48	70	-	-	-	8,5
	10	⅜	320	48	70	24,0	14,8	10,2	-
	15	½	320	48	70	-	-	-	8,5

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

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for steam, gases and liquids

Typ 70 SMK

Optionen / Options

AA) Verschlusskappe zusätzlich mit Entwässerungsbohrung G ½ sowie VA - Verschlussschraube mit PTFE-Dichtung.	**AA)** Bottom cap additionally with drainage G ½ as well as SS-plug with PTFE seal.
AB) Verschlusskappe mit Entwässerungsbohrung G ½, PTFE-Dichtung sowie Entleerungs- und Probierventil Baureihe EVE-327, DN 10 mit Schlauchstutzen Ø 10 mm.	**AB)** Bottom cap with drainage G ½ . PTFE seal as well as drain- and sample valve series EVE-327, DN10 with hose connection Ø 10 mm.
AC) Druckminderventil mit Einstellschraube und Schutzkappe.	**AC)** Pressure reducing valve adjusting screw and protective cap.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
EA) Minderdruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected reduced pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert.	**FA)** Body outside electropolished.
FB) Druckminderventil komplett außen elektropoliert.	**FB)** Pressure reducing valve completely outside electropolished.
FC) Durchflussgehäuse außen glasperlengestrahlt.	**FC)** Body outside glass blasted.
FD) Druckminderventil komplett außen glasperlengestrahlt.	**FD)** Pressure reducing valve completely outside glass blasted.
FE) Druckminderventil außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FE)** Pressure reducing valve completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm.
GB) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm.	**GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm.
GC) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm.	**GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm.
GD) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMS

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, vordruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Membransteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm

Werkstoffe:

- 1.4301
- 1.4435

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_70 SMS)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Diaphragm control
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm

Materials:

- 1.4301
- 1.4435

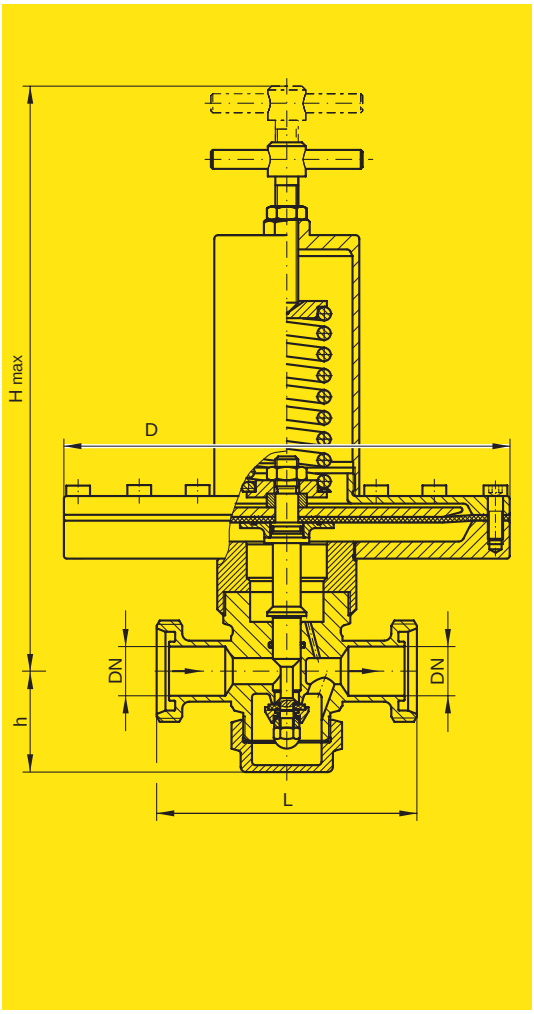
Options:

- CIP able design
- Air loaded

Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_70 SMS)



andere Anschlussformen siehe (A 70 SMS)
other connections see (A 70 SMS)

BG Size	Eintritt Inlet			Austritt Outlet			Baumaße Dimensions								K_{VS} Wert
			Vordruck P_1 Inlet pressure P_1			Minderdruckbereich** P_2 Reduced pressure range** P_2	Membran- D diaphragm- D Ausführung/Design								
	DN	NPS	bis / to	DN	NPS	minimal maximal					L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[bar(g)]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m³/h]
I	15 20 25 (S)	1/2 3/4 1 (S)	25	15 20 25 (S)	1/2 3/4 1 (S)	0,004 / 0,92	405	310	235	190	siehe / see (A 70 SMS)			285	3,0 3,2 3,5
II	25 (G) 32 40 (S) 50 (S)	1 (G) 1¼ 1½ (S) 2 (S)	16	25 (G) 32 40 (S) 50 (S)	1 (G) 1¼ 1½ (S) 2 (S)	0,004 / 0,85								300	6,3 6,5 6,7 6,9
III [1)]	40 (G) 50 (G) 65 (S)	1½ (G) 2 (G) 2½ (S)		40 (G) 50 (G) 65 (S)	1½ (G) 2 (G) 2½ (S)	0,004 / 0,79								330	12,5 13,0 13,5
III B [1)]	50 (G) 65 (G) 80	2 (G) 2½ (G) 3		50 (G) 65 (G) 80	2 (G) 2½ (G) 3	0,004 / 0,42								560	27,5 28,0 28,5

** Einstellbereiche des Minderdruckes siehe Rückseite (MDT-70 SMS) / spring range for reduced pressure see over-leaf (MDT-70 SMS)

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMS

Bitte beachten

1. Minderdruck:
1.1 Reduktionsverhältnis: (Empfehlung)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Vordruck siehe Typenblatt
1.3 Die eingebaute Ventilfeder kann unter den angegebenen minimalen Wert des Minderdruckbereich hinaus weiter entspannt werden. Hierbei ist jedoch zu beachten, dass sich bei kleineren Minderdrücken die prozentuale Regelabweichung erhöht.

1.4 Einstellbereiche gem. nachstehender Tabelle

Please note

1. Reduced pressure:
1.1 Reduction factor: (recommended)
max: $P_1 / P_2 = 40$ min: $P_1 / P_2 = 1,1$
1.2 max. Inlet pressure see main sheet
1.3 The fitted spring can be eased beyond the mentioned minimum (outlet) pressure range. In this case, please note, that with smaller outlet pressures the proportional deviation increases.

1.4 Spring ranges see table below

Tabelle: Einstellbereiche des Minderdruckes P_2
Table: spring ranges for reduced pressure P_2

Baugröße / Size	I	II	III	III B
Eintr./Austr.	DN 15, 20, 25	DN 25, 32, 40, 50	DN 40, 50, 65	DN 50, 65, 80
Inlet/Outlet	1/2, 3/4, 1	1, 1¼, 1½, 2	1½, 2, 2½	2, 2½, 3
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]			
	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,006 - 0,012	0,0055 - 0,011	0,0055 - 0,011	0,006 - 0,012
Ø 405	0,011 - 0,021	0,01 - 0,02	0,01 - 0,019	0,01 - 0,02
	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,035
	0,03 - 0,06	0,03 - 0,058	0,027 - 0,054	0,029 - 0,058
	0,015 - 0,025	0,015 - 0,023	0,015 - 0,022	0,015 - 0,023
	0,025 - 0,044	0,02 - 0,04	0,018 - 0,037	0,02 - 0,04
Ø 310	0,04 - 0,077	0,035 - 0,07	0,033 - 0,066	0,035 - 0,07
	0,06 - 0,127	0,06 - 0,12	0,06 - 0,11	0,058 - 0,116
			0,08 - 0,17	0,09 - 0,18
	0,05 - 0,057	0,05 - 0,09	0,05 - 0,085	0,05 - 0,09
	0,05 - 0,10	0,08 - 0,16	0,07 - 0,15	0,08 - 0,16
Ø 235	0,09 - 0,17	0,13 - 0,26	0,12 - 0,25	0,13 - 0,26
	0,15 - 0,29	0,20 - 0,41	0,19 - 0,38	0,21 - 0,42
	0,10 - 0,20	0,09 - 0,19	0,10 - 0,17	
	0,18 - 0,36	0,16 - 0,33	0,16 - 0,31	
Ø 190	0,30 - 0,59	0,25 - 0,54	0,25 - 0,50	
	0,50 - 0,92	0,42 - 0,85	0,40 - 0,79	

größere Minderdruckbereiche auf Anfrage / expanded ireduced pressure range on request

0106

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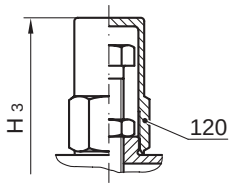
Typ 70 SMS

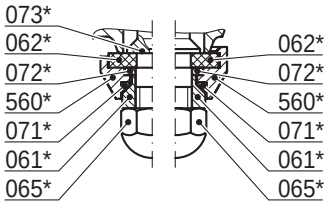
Typ 70.2 - SMS: Wst. / Material 1.4301
Typ 70.2 - SMS: Wst. / Material 1.4435

DN 15, 20, 25, 32, 40, 50, 65, 80

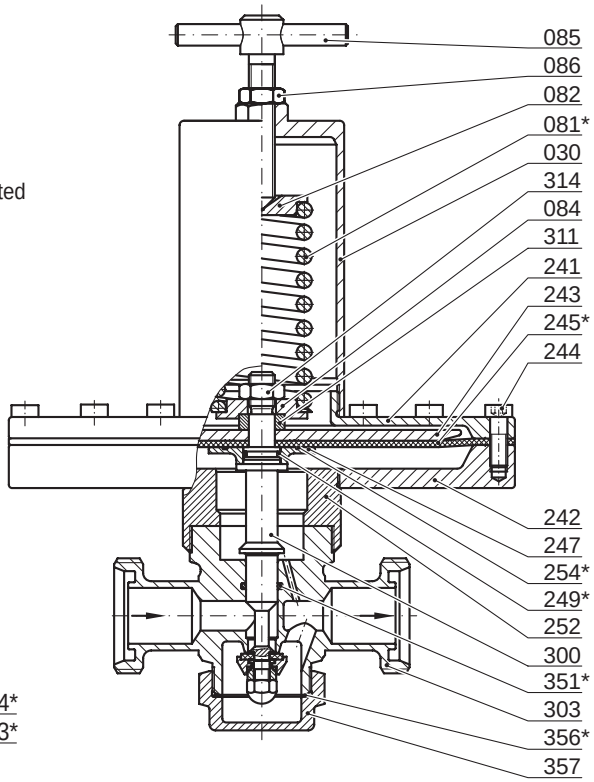
Options:

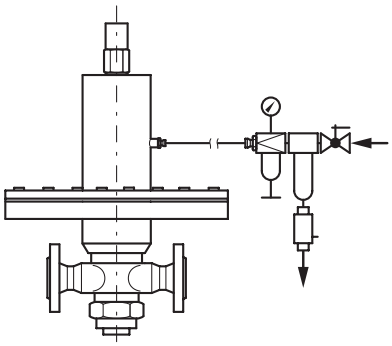


Valve with top cap
(Option AC)

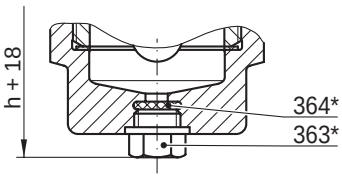


disc complete, pos. 060*
Thermoplast seated Elastomer seated





selected reduced pressure by air loading
design of the bonnet.
(Option EA)



drainage screw
(Option AA)

Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4435 [1]	242	1 lower housing	1.4571	1.4404
030	1 spring bonnet	1.4301	1.4301	243	1 upper clamp plate	1.4571	1.4571
060*	1 disc, complete			244	16 screws	A2	A2
560*	1 disc	1.4571	1.4404	245*	1 diaphragm	EPDM	EPDM
061*	1 pressure piece	1.4571	1.4404	247	1 lower clamp plate	1.4571	1.4404
062*	1 soft sealing	EPDM [2]	EPDM [2]	249*	1 o-ring	EPDM	EPDM
065*	1 disc bolt	A4	1.4404	252	1 adapter	1.4571	1.4404
071*	1 o-ring	EPDM	EPDM	254*	1 o-ring	EPDM	EPDM
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4404
073*	1 o-ring	EPDM	EPDM	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
084	1 springplate, lower	1.4305	1.4305	356*	1 sealing ring	PTFE	PTFE
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4404
086	1 lock nut	A2	A2	363*	1 drainage screw	A4	A4
120	1 cap	1.4571	1.4571	364*	1 sealing ring	PTFE	PTFE
241	1 upper housing	1.4571	1.4404				

* expendable parts
size III + III B only material-design 1.4435

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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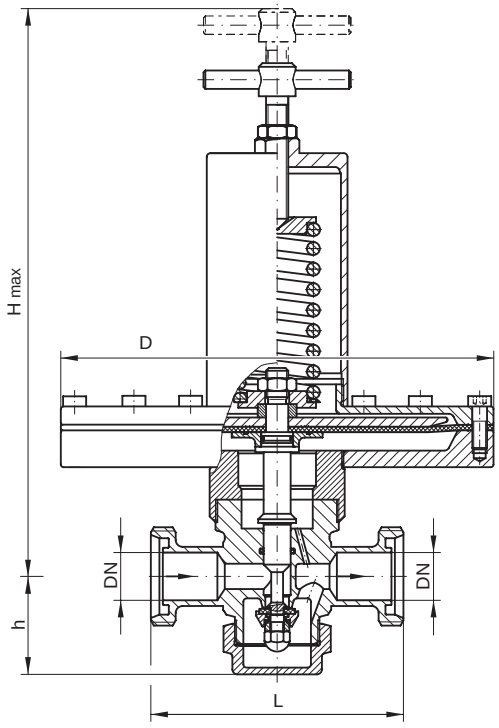
Typ 70 SMS

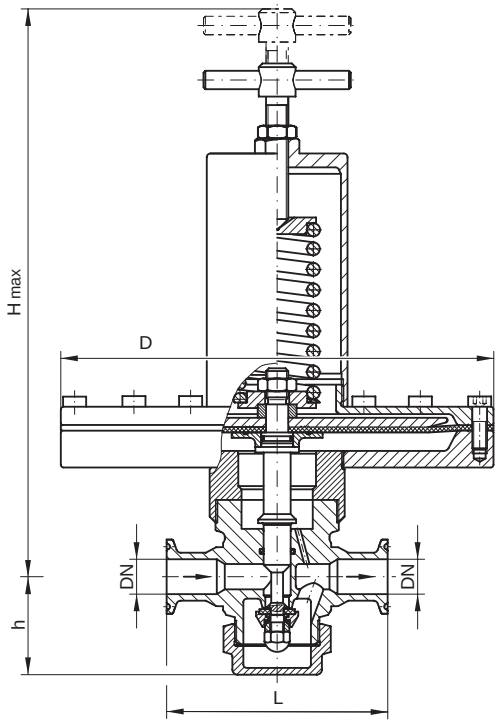
Anschlüsse / Connections



Baureihe / Series: SMS-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	Rd 34x1/8	310	58	129	-	-	10,9	-
	20	Rd 44x1/6	310	58	135	-	-	-	-
	25 (S)	Rd 52x1/6	310	58	145	-	-	-	-
II	25 (G)	Rd 52x1/6	320	68	160	-	-	-	-
	32	Rd 58x1/6	320	68	166	-	-	-	-
	40 (S)	Rd 65x1/6	320	68	168	-	-	-	-
	50 (S)	Rd 78x1/6	320	68	170	-	-	12,5	-
III	40 (G)	Rd 65x1/6	350	85	208	-	-	-	-
	50 (G)	Rd 78x1/6	350	85	212	-	-	-	-
	65 (S)	Rd 95x1/6	350	85	222	-	-	-	-
III B	50 (G)	Rd 78x1/6	580	145	270	-	-	-	-
	65 (G)	Rd 95x1/6	580	145	280	-	-	-	-
	80	Rd 110x1/4	580	145	290	-	-	-	-



Baureihe / Series: SMS-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	310	58	120	-	-	-	-
	20	¾	310	58	120	-	-	-	-
	25 (S)	1 (S)	310	58	130	-	15,7	-	9,7
II	25 (G)	1 (G)	320	68	145	-	-	-	-
	32	1¼	320	68	145	-	-	-	-
	40 (S)	1½ (S)	320	68	145	-	-	-	-
	50 (S)	2 (S)	320	68	145	-	-	-	-
III	40 (G)	1½ (G)	350	85	180	-	-	-	-
	50 (G)	2 (G)	350	85	180	-	-	-	-
	65 (S)	2½ (S)	350	85	180	-	-	-	-
III B	50 (G)	2 (G)	580	145	260	-	-	-	-
	65 (G)	2½ (G)	580	145	260	-	-	-	-
	80	3	580	145	260	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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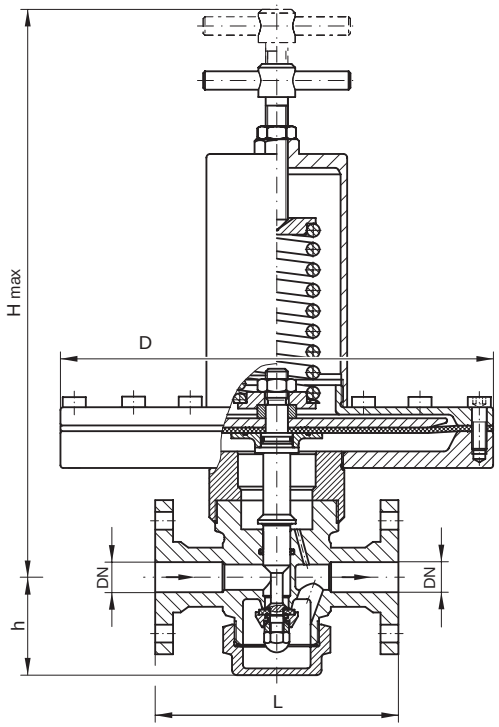
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMS

Anschlüsse / Connections

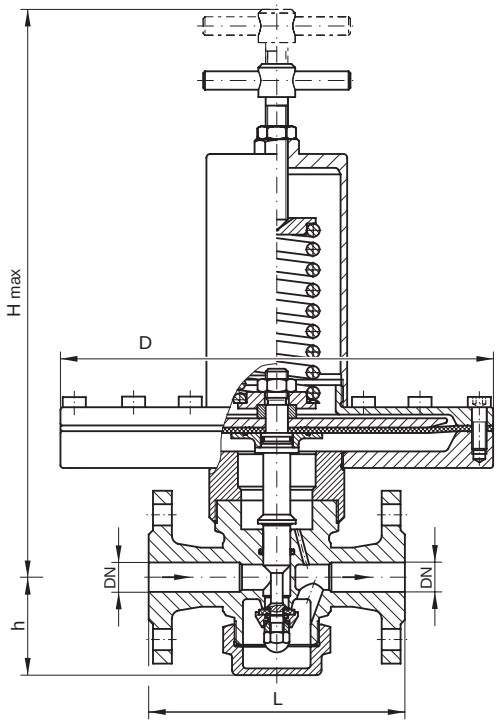


Baureihe / Series: SMS-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	310	58	135	-	-	-	-
	20	¾	310	58	135	-	-	-	-
	25 (S)	1 (S)	310	58	135	-	-	-	-
II	25 (G)	1 (G)	320	68	150	-	-	-	-
	32	1¼	320	68	150	-	-	-	-
	40 (S)	1½ (S)	320	68	150	-	-	-	-
	50 (S)	2 (S)	320	68	150	-	-	-	-
III	40 (G)	1½ (G)	350	85	190	-	-	-	-
	50 (G)	2 (G)	350	85	190	-	-	-	-
	65 (S)	2½ (S)	350	85	190	-	-	-	-
III B	50 (G)	2 (G)	580	145	260	-	-	-	-
	65 (G)	2½ (G)	580	145	260	-	-	-	-
	80	3	580	145	260	-	-	-	-

* vorzugsweise Glatt- bzw. Bundflansche am DMV.



Baureihe / Series: SMS-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	310	58	130	-	16,0	-	-
	20	¾	310	58	150	-	17,0	-	-
II	25	1	320	68	160	-	-	14,0	13,0
	32	1¼	320	68	180	-	-	-	-
III	40	1½	350	85	200	-	-	19,0	-
	50 (S)	2 (S)	350	85	230	-	25,0	20,4	-
III B	50 (G)	2 (G)	580	145	300	-	39,0	-	-
	65	2½	580	145	290	-	-	-	-
	80	3	580	145	310	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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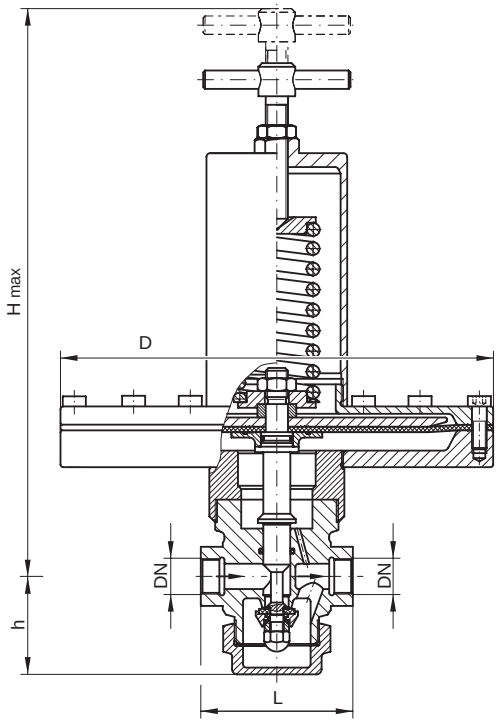
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMS

Anschlüsse / Connections



Baureihe / Series: SMS-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	310	58	90	-	16,0	-	-
	20	¾	310	58	90	-	-	10,8	9,5
	25 (S)	1 (S)	310	58	135	-	15,6	-	9,3
II	25 (G)	1 (G)	320	68	105	-	-	12,5	10,5
	32	1¼	320	68	105	-	-	-	-
	40 (S)	1½ (S)	320	68	155	-	-	-	-
	50 (S)	2 (S)	320	68	185	30,0	-	-	-
III	40 (G)	1½ (G)	350	85	145	-	-	-	-
	50 (G)	2 (G)	350	85	145	-	-	-	-
	65 (S)	2½ (S)	350	85	210	-	-	-	-
III B	50 (G)	2 (G)	580	145	220	-	-	-	-
	65 (G)	2½ (G)	580	145	220	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 70 SMS

Optionen / Options

AA) Verschlusskappe zusätzlich mit Entwässerungsbohrung G ½ sowie VA - Verschlussschraube mit PTFE-Dichtung.	**AA)** Bottom cap additionally with drainage G ½ as well as SS-plug with PTFE seal.
AB) Verschlusskappe mit Entwässerungsbohrung G ½, PTFE-Dichtung sowie Entleerungs- und Probierventil Baureihe EVE-327, DN 10 mit Schlauchstutzen Ø 10 mm.	**AB)** Bottom cap with drainage G ½ . PTFE seal as well as drain- and sample valve series EVE-327, DN10 with hose connection Ø 10 mm.
AC) Druckminderventil mit Einstellschraube und Schutzkappe.	**AC)** Pressure reducing valve adjusting screw and protective cap.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
EA) Minderdruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected reduced pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert.	**FA)** Body outside electropolished.
FB) Druckminderventil komplett außen elektropoliert.	**FB)** Pressure reducing valve completely outside electropolished.
FC) Durchflussgehäuse außen glasperlengestrahlt.	**FC)** Body outside glass blasted.
FD) Druckminderventil komplett außen glasperlengestrahlt.	**FD)** Pressure reducing valve completely outside glass blasted.
FE) Druckminderventil außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FE)** Pressure reducing valve completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm.
GB) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm.	**GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm.
GC) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm.	**GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm.
GD) Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.

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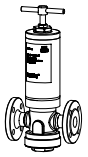
Vordruckregler, Industrie - Ausführung
Initial-Pressure-Controller, Industry - design



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Ventil Valve	Verwendung Use	Medium	DN mm	P_1 bar
Typ 80	Vordruckregler, federbelastet Initial Pressure Controller, springloaded mit Gewindeanschluss / with screwed ends	D/G/F	8 - 65 1/4 - 2½	0,25 - 62,0
Typ 81	Vordruckregler, federbelastet Initial Pressure Controller, springloaded mit Flanschanschluss, Sonderflansche / with flanged ends, special flanges	D/G/F	10 - 80 1/2 - 3	0,25 - 60,0
Typ 84	Vordruckregler, federbelastet Initial Pressure Controller, springloaded Gewindeanschluss, Membranventil / with screwed ends, diaphragm valve	D/G/F	8 - 65 1/4 - 2½	0,004 - 0,98
Typ 85	Vordruckregler, federbelastet Initial Pressure Controller, springloaded mit Flanschen, Sonderflanschen, Membranventil / with flanges, special flanges, diaphragm valve	D/G/F	10 - 80 1/2 - 3	0,004 - 0,98

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

Vordruck / inlet pressure..... - P_1 -

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

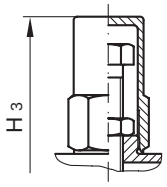
für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 80

Typ 80.2 : Wst. / Material 1.4301
Typ 80.2 : Wst. / Material 1.4571

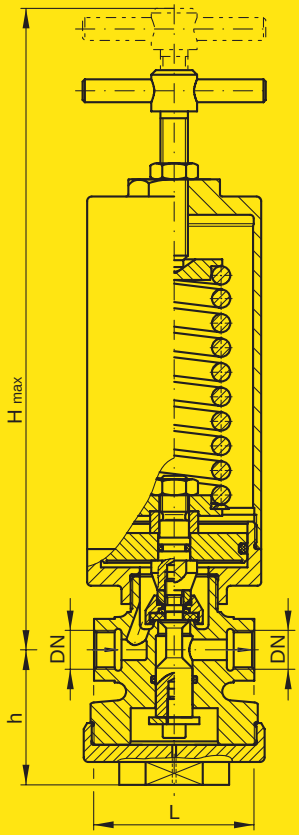
Industrie - Ausführung / Industry - design

Gegendruckunabhängig / Back pressure independent



Vordruckregler mit Schutzkappe
auf Anfrage

Valve with top cap
on request



BG / Size 0

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions				Gewicht Weight
	DN		Vordruckbereich** P_1 initial pressure range** P_1 minimal maximal	DN		L	H_{max}	H_3	h	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[mm]	[mm]	[mm]	[mm]	[kg]
0	8* 10 15*	1/4* 3/8 1/2*	0,35 / 62,0	8* 10 15*	1/4* 3/8 1/2*	70	272	267	59	2,1
I	15 20 25*	1/2 3/4 1*	0,35 / 60,0	15 20 25*	1/2 3/4 1*	90 90 135	282	262	67	4,1
II	25 32 40*	1 1¼ 1½*	0,25 / 47,0	25 32 40*	1 1¼ 1½*	105 105 155	288	268	75	5,8
III 2)	40 50 65*	1½ 2 2½*	0,25 / 50,0	40 50 65*	1½ 2 2½*	145 145 210	335	315	90	10,3
III B 2)	50 65	2 2½*	0,25 / 19,5	50 65	2 2½*	220 220	540	520	112	

* Sondergröße / special size ** Einstellbereiche des Vordruckes siehe Rückseite (VDT-80) / spring range for initial pressure see over-leaf (VDT-80)
1) Gewindemuffe nach DIN ISO 228, andere auf Anfrage / female screw acc. to DIN ISO 228, other on request

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 80

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

BG / Size	0	I	II	III	III B
Eintr./Austr.	DN 8, DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65
Inlet/Outlet	1/4, 3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]				
					0,25 - 0,54
					0,45 - 0,90
Ø 119					0,70 - 1,37
					1,02 - 2,04
					1,65 - 3,30
					2,40 - 4,80
				0,25 - 0,55	1,10 - 2,20
Ø 99				0,43 - 0,85	1,65 - 3,30
				0,68 - 1,35	2,65 - 5,30
				1,20 - 2,40	3,90 - 7,70
				1,40 - 2,70	
			0,25 - 0,55	0,41 - 0,82	2,70 - 5,40
			0,46 - 0,92	0,65 - 1,27	4,30 - 8,60
Ø 84			0,72 - 1,44	1,00 - 2,00	6,30 - 12,60
			1,10 - 2,20	1,80 - 3,50	7,40 - 14,70
			1,60 - 3,10	2,00 - 4,00	9,80 - 19,50
			2,00 - 4,00		
	0,35 - 0,59	0,35 - 0,57	1,40 - 2,70	1,40 - 2,70	
	0,50 - 1,05	0,50 - 1,00	2,00 - 4,10	2,20 - 4,30	
Ø 64	0,90 - 1,72	0,80 - 1,60	2,90 - 5,80	3,70 - 7,40	
	1,40 - 2,70	1,30 - 2,60	3,70 - 7,40	4,30 - 8,50	
	2,10 - 4,18	2,00 - 4,00			
	3,00 - 6,00	2,90 - 5,70			
	2,50 - 5,00	2,40 - 4,80	2,80 - 5,60	4,10 - 8,20	
Ø 48	3,90 - 7,80	3,60 - 7,50	4,40 - 8,70	6,60 - 13,10	
	5,50 - 11,20	5,40 - 10,70	6,10 - 12,20	11,50 - 23,00	
	7,20 - 14,40	6,90 - 13,70	7,80 - 15,50	13,00 - 26,00	
				17,00 - 33,00	
				25,00 - 50,00	
	4,40 - 8,70	4,20 - 8,40	6,00 - 12,00		
	6,80 - 13,50	6,50 - 13,00	10,00 - 18,50		
Ø 38	9,70 - 19,20	9,20 - 18,40	13,00 - 26,00		
	12,40 - 24,80	12,00 - 23,70	17,00 - 33,00		
			22,00 - 44,00		
			24,00 - 47,00		
	11,00 - 21,90	10,50 - 21,00			
	17,00 - 34,00	17,00 - 33,00			
Ø 27	24,00 - 48,00	23,00 - 46,00			
	31,00 - 62,00	30,00 - 60,00			
		40,00 - 80,00 *			
		48,00 - 95,00 *			

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request
* nur für DN 15 / only DN 15

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 80

Discharge capacities
for saturated steam

for definition the size of Initial-Pressure-Controller

Size		0	I		II		III		III B	
Nominal pipe		10	15	20	25	32	40	50	50	65
		3/8	1/2	3/4	1	1¼	1½	2	2	2½
Overpressure $p_ü$ [bar(g)]		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180
	0,2	5	11	19	31	46	99	145	145	210
	0,3	6	13	23	35	55	112	160	160	240
	0,5	7	16	28	46	70	140	200	200	300
	0,75	9	20	35	57	85	175	250	250	370
	1	11	25	42	68	100	210	300	300	450
	1,5	14	32	55	90	140	280	400	400	590
	2	17	40	70	115	170	350	520	520	750
	2,5	21	47	84	135	200	400	600	600	880
	3	24	55	99	155	240	480	700	700	1020
	4	31	70	123	195	300	600	890	890	1300
	5	38	85	150	245	360	740	1080	1080	1600
	6	46	104	185	300	450	900	1340	1340	1950
	7	54	122	225	350	540	1100	1600	1600	2400
	8	62	140	250	400	600	1250	1800	1800	2700
	9	71	160	280	450	680	1380	2000	2000	2900
	10	80	180	320	500	750	1500	2300	2300	3300
	12	98	220	380	610	900	1850	2700	2700	4000
	14	115	260	450	720	1050	2300	3100	3100	4700

a) To the defination of the right valve size according to the table, the initial pressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{initial pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

P_1 > 15 [bar(g)] (>200°C): on request

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

I 0106

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 80

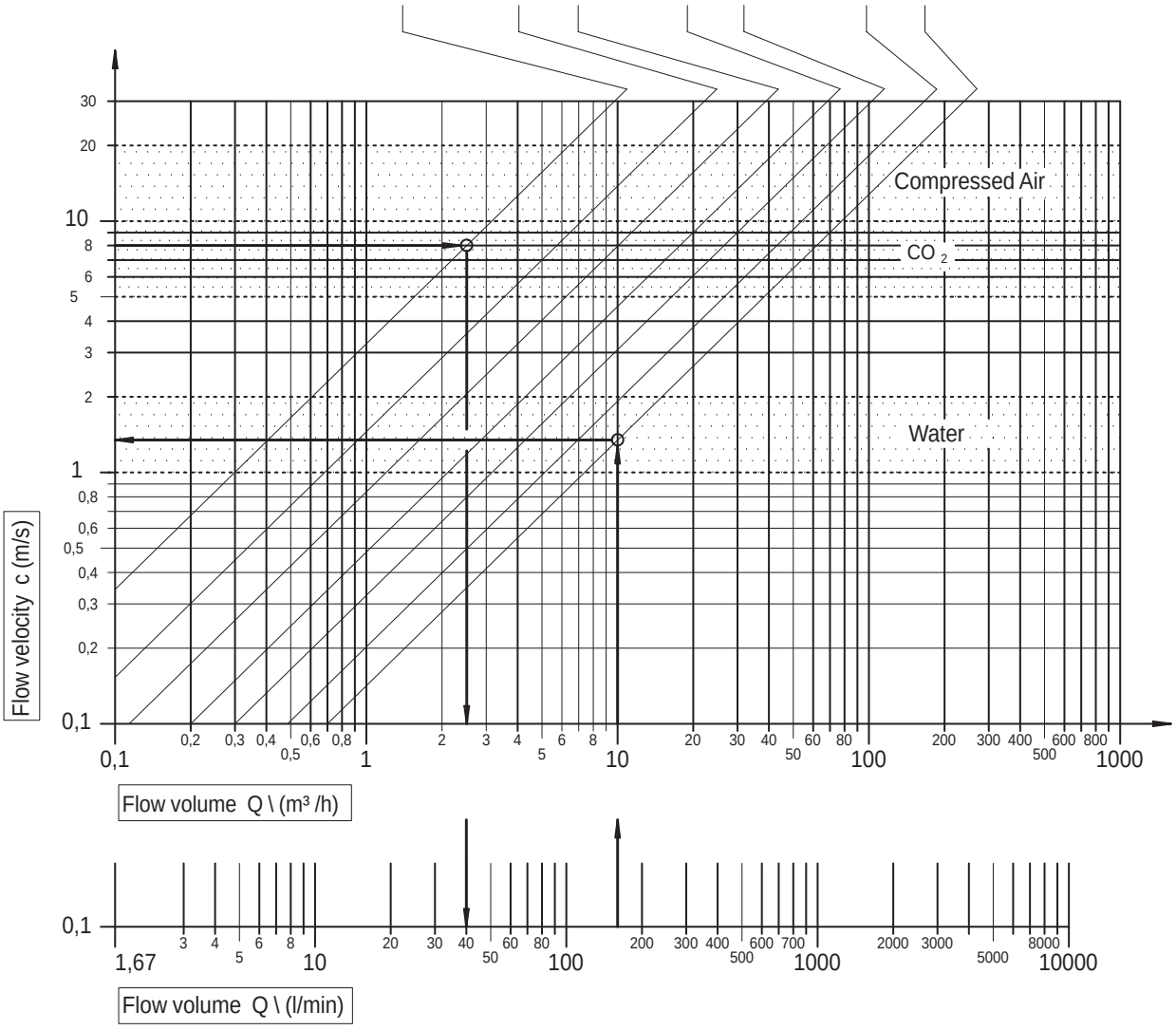
Troughput diagram for pressure initial contoller

(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

BG	0			I			II			III			III B	
Eintr./Austr.	DN 8	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65
	1/4	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2
K_{VS}- Wert	1,2	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28



gl 01'06

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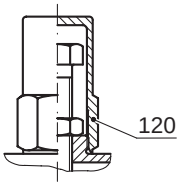
for steam, gases and liquids, expanded range of adjustment

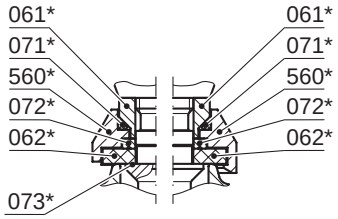
Typ 80

Typ 80.2 : Wst. / Material 1.4301
Typ 80.2 : Wst. / Material 1.4571

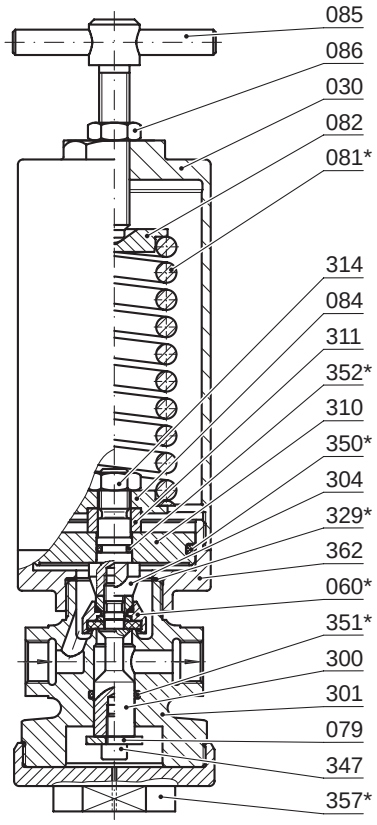
G 1/4, 3/8, 1/2



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size 0

Item	Description	Material		Item	Description	Material	
301	1 valve body	1.4301	1.4571 [1)]	300	1 piston	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4571
060*	1 disc, complete			310	1 piston plate	1.4571	1.4571
560*	1 disc	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4571	314	1 lock nut	A4	A4
062*	1 soft sealing	see techn. appendix: KWD-1		329*	1 o-ring	FPM [1)]	FPM [1)]
071*	1 o-ring	FPM [1)]	FPM [1)]	347	1 screw	A4	A4
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	FPM [1)]	FPM [1)]
073*	1 o-ring	FPM [1)]	FPM [1)]	351*	1 o-ring	FPM [1)]	FPM [1)]
079	1 lift stopper	1.4571	1.4571	352*	1 o-ring	FPM [1)]	FPM [1)]
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4571
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

* expendable parts

[1)] other materials on request

gl 01'06

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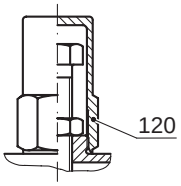
Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

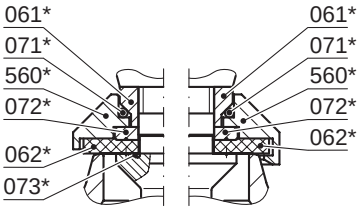
Typ 80

Typ 80.2 : Wst. / Material 1.4301
Typ 80.2 : Wst. / Material 1.4571

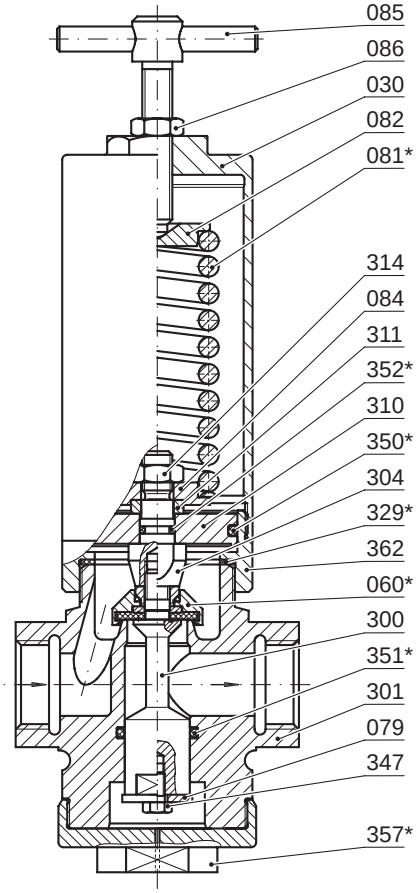
G 1/2, 3/4, 1, 1¼, 1½, 2, 2½



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size I - III B

Item	Description	Material		Item	Description	Material	
301	1 valve body	1.4301	1.4571 [1)]	300	1 piston	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4571
060*	1 disc, complete			310	1 piston plate	1.4571	1.4571
560*	1 disc	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4571	314	1 lock nut	A4	A4
062*	1 soft sealing	see techn. appendix: KWD-1		329*	1 o-ring	FPM [1)]	FPM [1)]
071*	1 o-ring	FPM [1)]	FPM [1)]	347	1 screw	A4	A4
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	FPM [1)]	FPM [1)]
073*	1 o-ring	FPM [1)]	FPM [1)]	351*	1 o-ring	FPM [1)]	FPM [1)]
079	1 lift stopper	1.4571	1.4571	352*	1 o-ring	FPM [1)]	FPM [1)]
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4571
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

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* expendable parts

[1)] other materials on request

size III + III B only material-design 1.4571

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

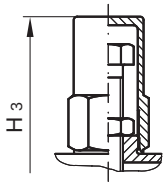
für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 81

Typ 81.2 : Wst. / Material 1.4301
Typ 81.2 : Wst. / Material 1.4571

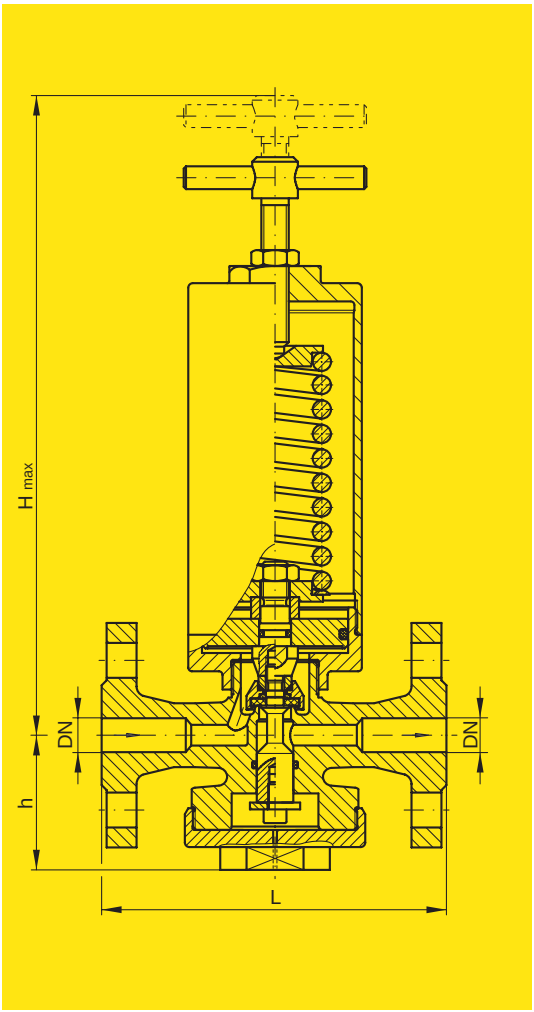
Industrie - Ausführung / Industry - design

Gegendruckunabhängig / Back pressure independent



Vordruckregler mit Schutzkappe
auf Anfrage

Valve with top cap
on request



BG / Size 0

Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions				Gewicht Weight
	DN		Vordruckbereich** P_1 initial pressure range** P_1	DN						
	DIN	ANSI	minimal maximal	DIN	ANSI	L	H_{max}	H_3	h	
	[mm]		[bar(g)]	[mm]		[mm]	[mm]	[mm]	[mm]	[kg]
0	10 15*	- 1/2*	0,35 / 62,0	10 15*	- 1/2*	130	272	267	59	2,6
I	15 20 25*	1/2 3/4 1*	0,35 / 60,0	15 20 25*	1/2 3/4 1*	130 150 160	282	262	67	6,2
II	25 32 40*	1 1¼ 1½*	0,25 / 47,0	25 32 40*	1 1¼ 1½*	160 180 200	288	268	75	8,0
III [1)]	40 50 65*	1½ 2 2½*	0,25 / 50,0	40 50 65*	1½ 2 2½*	200 230 290	335	315	90	14,2
III B [1)]	50 65 80	2 2½ 3	0,25 / 19,5	50 65 80	2 2½ 3	300 290 310	540	520	112	

* Sondergröße / special size ** Einstellbereiche des Vordruckes siehe Rückseite (VDT-81) / spring range for initial pressure see over-leaf (VDT-81)

1) Nur in Werkstoff-Ausführung 1.4571 / only material-design 1.4571

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 81

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

BG / Size	0	I	II	III	III B
Eintr./Austr.	DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65, DN 80
Inlet/Outlet	3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½, 3
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]				
					0,25 - 0,54
					0,45 - 0,90
Ø 119					0,70 - 1,37
					1,02 - 2,04
					1,65 - 3,30
					2,40 - 4,80
				0,25 - 0,55	1,10 - 2,20
Ø 99				0,43 - 0,85	1,65 - 3,30
				0,68 - 1,35	2,65 - 5,30
				1,20 - 2,40	3,90 - 7,70
				1,40 - 2,70	
			0,25 - 0,55	0,41 - 0,82	2,70 - 5,40
			0,46 - 0,92	0,65 - 1,27	4,30 - 8,60
Ø 84			0,72 - 1,44	1,00 - 2,00	6,30 - 12,60
			1,10 - 2,20	1,80 - 3,50	7,40 - 14,70
			1,60 - 3,10	2,00 - 4,00	9,80 - 19,50
			2,00 - 4,00		
	0,35 - 0,59	0,35 - 0,57	1,40 - 2,70	1,40 - 2,70	
	0,50 - 1,05	0,50 - 1,00	2,00 - 4,10	2,20 - 4,30	
Ø 64	0,90 - 1,72	0,80 - 1,60	2,90 - 5,80	3,70 - 7,40	
	1,40 - 2,70	1,30 - 2,60	3,70 - 7,40	4,30 - 8,50	
	2,10 - 4,18	2,00 - 4,00			
	3,00 - 6,00	2,90 - 5,70			
	2,50 - 5,00	2,40 - 4,80	2,80 - 5,60	4,10 - 8,20	
Ø 48	3,90 - 7,80	3,60 - 7,50	4,40 - 8,70	6,60 - 13,10	
	5,50 - 11,20	5,40 - 10,70	6,10 - 12,20	11,50 - 23,00	
	7,20 - 14,40	6,90 - 13,70	7,80 - 15,50	13,00 - 26,00	
				17,00 - 33,00	
				25,00 - 50,00	
	4,40 - 8,70	4,20 - 8,40	6,00 - 12,00		
	6,80 - 13,50	6,50 - 13,00	10,00 - 18,50		
Ø 38	9,70 - 19,20	9,20 - 18,40	13,00 - 26,00		
	12,40 - 24,80	12,00 - 23,70	17,00 - 33,00		
			22,00 - 44,00		
			24,00 - 47,00		
	11,00 - 21,90	10,50 - 21,00			
	17,00 - 34,00	17,00 - 33,00			
Ø 27	24,00 - 48,00	23,00 - 46,00			
	31,00 - 62,00	30,00 - 60,00			
		40,00 - 80,00 *			
		48,00 - 95,00 *			

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request
* nur für DN 15 / only DN 15

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 81

Discharge capacities
for saturated steam

for definition the size of Initial-Pressure-Controller

Size		0	I		II		III		III B	
Nominal pipe		10	15	20	25	32	40	50	50	65
		3/8	1/2	3/4	1	1¼	1½	2	2	2½
Overpressure $p_ü$ [bar(g)]		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180
	0,2	5	11	19	31	46	99	145	145	210
	0,3	6	13	23	35	55	112	160	160	240
	0,5	7	16	28	46	70	140	200	200	300
	0,75	9	20	35	57	85	175	250	250	370
	1	11	25	42	68	100	210	300	300	450
	1,5	14	32	55	90	140	280	400	400	590
	2	17	40	70	115	170	350	520	520	750
	2,5	21	47	84	135	200	400	600	600	880
	3	24	55	99	155	240	480	700	700	1020
	4	31	70	123	195	300	600	890	890	1300
	5	38	85	150	245	360	740	1080	1080	1600
	6	46	104	185	300	450	900	1340	1340	1950
	7	54	122	225	350	540	1100	1600	1600	2400
	8	62	140	250	400	600	1250	1800	1800	2700
	9	71	160	280	450	680	1380	2000	2000	2900
	10	80	180	320	500	750	1500	2300	2300	3300
	12	98	220	380	610	900	1850	2700	2700	4000
	14	115	260	450	720	1050	2300	3100	3100	4700

a) To the defination of the right valve size according to the table, the initial pressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{initial pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

P_1 > 15 [bar(g)] (>200°C): on request

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

Typ 81

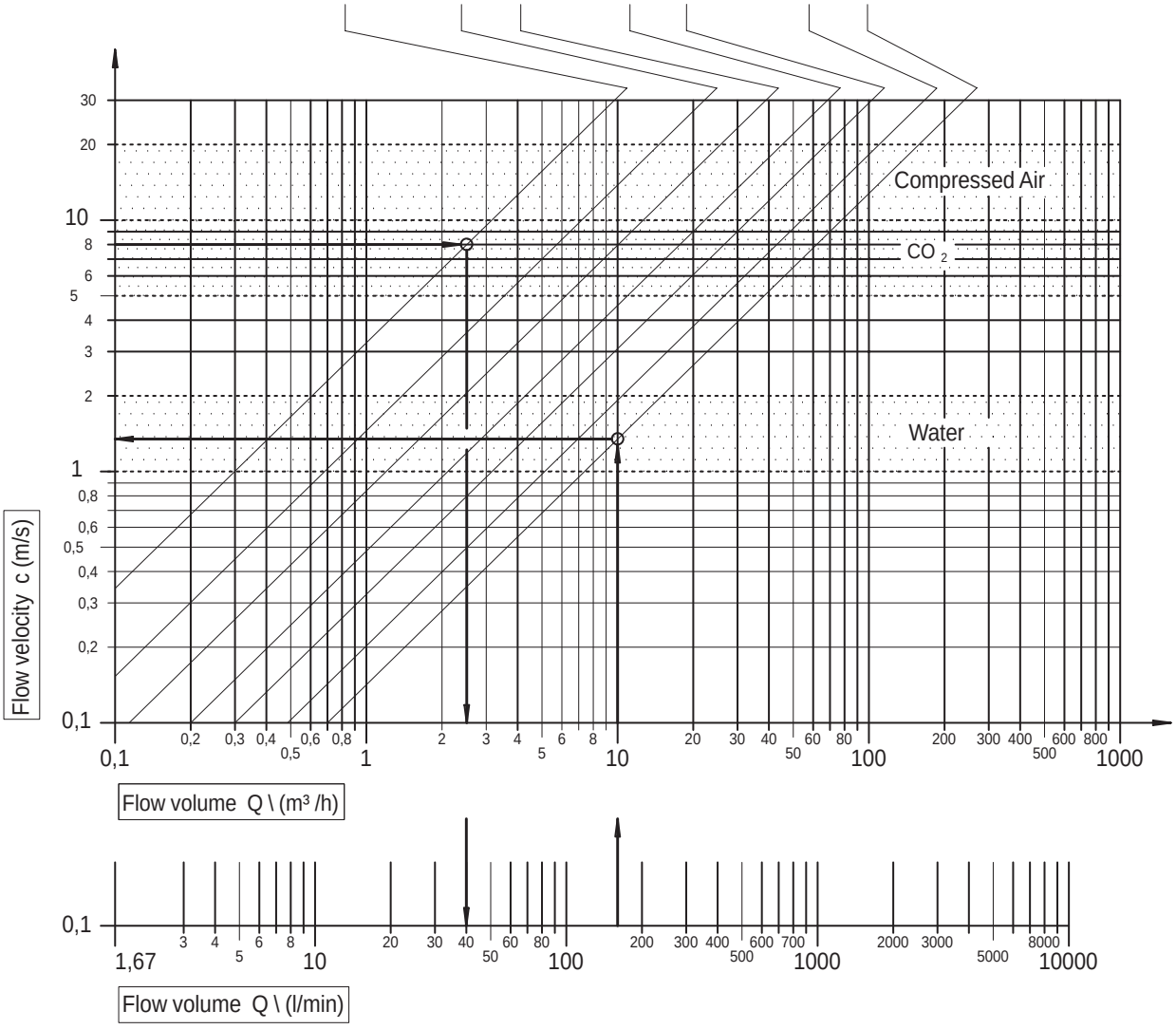
Troughput diagram for pressure initial contoller

(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	0		I			II			III			III B		
Inlet / Outlet	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65	DN 80
	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2	3
K_{VS}- Wert	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28,0	28,5



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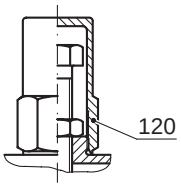
Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

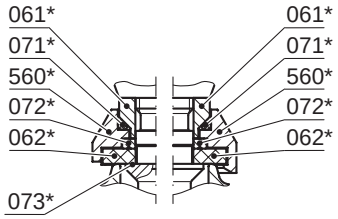
Typ 81

Typ 81.2 : Wst. / Material 1.4301
Typ 81.2 : Wst. / Material 1.4571

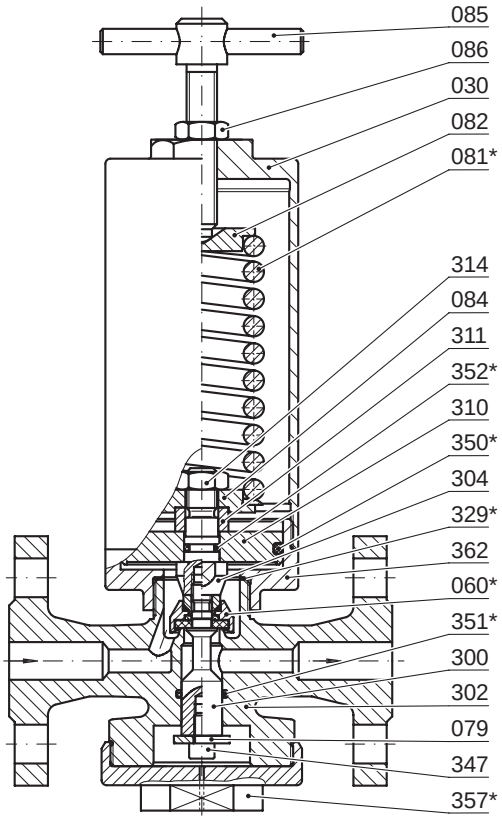
DN 10, 15



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size 0

Item	Description	Material		Item	Description	Material	
302	1 valve body with flanges	1.4301	1.4571	300	1 piston	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4571
060*	1 disc, complete			310	1 piston plate	1.4571	1.4571
560*	1 disc	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4571	314	1 lock nut	A4	A4
062*	1 soft sealing	see techn. appendix: KWD-1		329*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	347	1 screw	A4	A4
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
079	1 lift stopper	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4571
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

* expendable parts

[1] other materials on request

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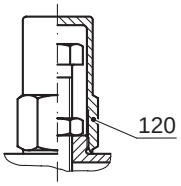
Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, großer Regelbereich
for steam, gases and liquids, expanded range of adjustment

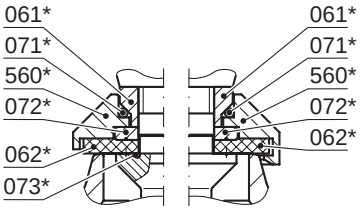
Typ 81

Typ 81.2 : Wst. / Material 1.4301
Typ 81.2 : Wst. / Material 1.4571

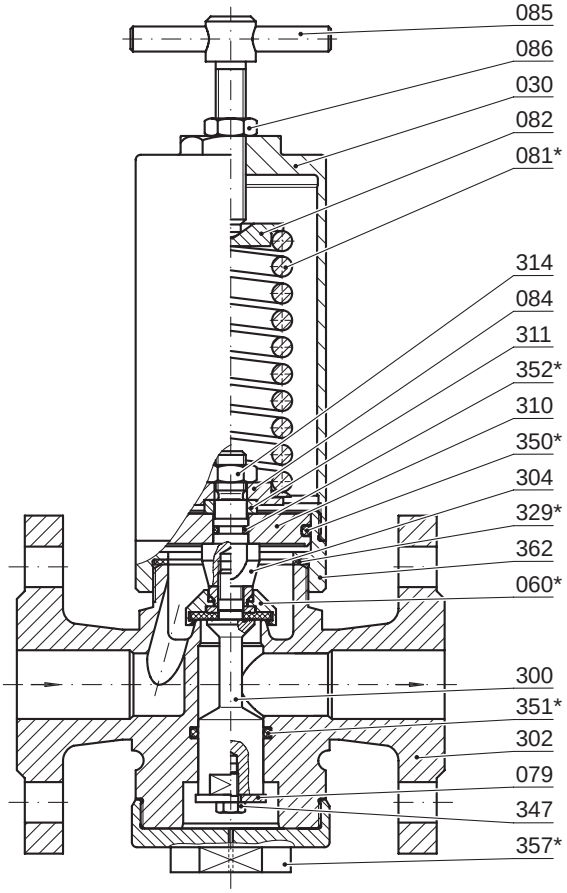
DN 15, 20, 25, 32,
40, 50, 65, 80



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Size I - III B

Item	Description	Material		Item	Description	Material	
302	1 valve body with flanges	1.4301	1.4571	300	1 piston	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4571
060*	1 disc, complete			310	1 piston plate	1.4571	1.4571
560*	1 disc	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4571	314	1 lock nut	A4	A4
062*	1 soft sealing	see techn. appendix: KWD-1		329*	1 o-ring	FPM [1]	FPM [1]
071*	1 o-ring	FPM [1]	FPM [1]	347	1 screw	A4	A4
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	FPM [1]	FPM [1]
073*	1 o-ring	FPM [1]	FPM [1]	351*	1 o-ring	FPM [1]	FPM [1]
079	1 lift stopper	1.4571	1.4571	352*	1 o-ring	FPM [1]	FPM [1]
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4571
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4571
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

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* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

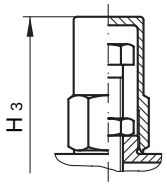
für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 84

Typ 84.2 : Wst. / Material 1.4301
Typ 84.2 : Wst. / Material 1.4571

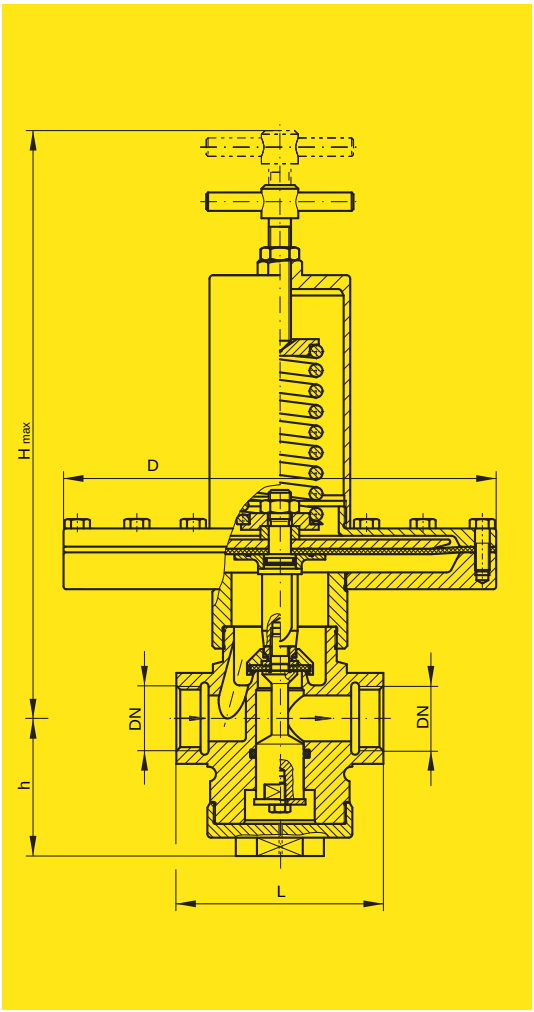
Industrie - Ausführung / Industry - design

Gegendruckunabhängig / Back pressure independent



Vordruckregler mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet		Austritt Outlet		Baumaße Dimensions								Gewicht Weight
	DN		Vordruckbereich** initial pressure range** P_1 P_1 minimal / maximal	DN		Membran- D diaphragm- D Ausführung/Design				L	H_{max}	H_3	h	
	[mm]	G 1)	[bar(g)]	[mm]	G 1)	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
0	8 10 15*	1/4 3/8 1/2*	0,004 / 0,98	8 10 15*	1/4 3/8 1/2*	405	310	235	190	70	270	265	59	9,8
I	15 20 25*	1/2 3/4 1*	0,004 / 0,94	15 20 25*	1/2 3/4 1*					90 90 135	280	275	67	10,9 10,9 14,1
II	25 32 40*	1 1¼ 1½*	0,004 / 0,90	25 32 40*	1 1¼ 1½*					105 105 155	300	295	75	12,7 12,7 16,0
III 2)	40 50 65*	1½ 2 2½*	0,004 / 0,91	40 50 65*	1½ 2 2½*					145 145 210	340	335	90	18,8 18,8 22,1
III B 2)	50 65	2 2½	0,004 / 0,46	50 65	2 2½					220 220	560	540	112	

* Sondergröße / special size ** Einstellbereiche des Vordruckes siehe Rückseite (VDT-84) / spring range for initial pressure see over-leaf (VDT-84)
1) Gewindemuffe nach DIN ISO 228, andere auf Anfrage / female screw acc. to DIN ISO 228, other on request

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 84

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

Baugröße / Size	0	I	II	III	III B
Eintr./Austr.	DN 8, DN 10, DN 15	DN 15, DN 20, DN 25	DN 25, DN 32, DN 40	DN 40, DN 50, DN 65	DN 50, DN 65
Inlet/Outlet	1/4, 3/8, 1/2	1/2, 3/4, 1	1, 1¼, 1½	1½, 2, 2½	2, 2½
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]				
	0,004 - 0,0078	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,007 - 0,013	0,007 - 0,013	0,006 - 0,012	0,006 - 0,011	0,006 - 0,012
Ø 405	0,012 - 0,023	0,011 - 0,022	0,01 - 0,02	0,095 - 0,019	0,01 - 0,02
	0,02 - 0,04	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,036
	0,033 - 0,066	0,032 - 0,063	0,03 - 0,058	0,028 - 0,055	0,03 - 0,059
	0,05 - 0,1	0,050 - 0,099	0,046 - 0,091	0,043 - 0,086	0,046 - 0,092
	0,015 - 0,027	0,015 - 0,026	0,015 - 0,024	0,015 - 0,022	0,015 - 0,025
	0,025 - 0,046	0,023 - 0,044	0,021 - 0,041	0,019 - 0,038	0,021 - 0,042
Ø 310	0,04 - 0,08	0,039 - 0,077	0,036 - 0,072	0,034 - 0,068	0,037 - 0,074
	0,07 - 0,133	0,065 - 0,128	0,06 - 0,12	0,056 - 0,112	0,061 - 0,122
	0,11 - 0,21	0,1 - 0,2	0,093 - 0,185	0,088 - 0,175	0,096 - 0,191
	0,05 - 0,06	0,05 - 0,058	0,05 - 0,094	0,045 - 0,09	0,05 - 0,102
	0,05 - 0,1	0,05 - 0,1	0,083 - 0,165	0,08 - 0,16	0,091 - 0,181
Ø 235	0,09 - 0,18	0,088 - 0,176	0,137 - 0,273	0,132 - 0,264	0,15 - 0,3
	0,15 - 0,30	0,146 - 0,291	0,213 - 0,426	0,206 - 0,411	0,233 - 0,465
	0,24 - 0,47	0,227 - 0,454			
	0,11 - 0,22	0,1 - 0,21	0,1 - 0,2	0,1 - 0,2	
	0,19 - 0,38	0,19 - 0,37	0,18 - 0,35	0,18 - 0,35	
Ø 190	0,32 - 0,63	0,3 - 0,6	0,28 - 0,58	0,29 - 0,58	
	0,5 - 0,98	0,48 - 0,94	0,45 - 0,9	0,46 - 0,91	

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request

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Initial-Pressure-Controller, springloaded

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for steam, gases and liquids, for very low reduced pressure

Typ 84

Discharge capacities
for saturated steam

for definition the size of Initial-Pressure-Controller

Size		0	I		II		III		III B	
Over-pressure $p_ü$ [bar(g)] / Nominal pipe		10	15	20	25	32	40	50	50	65
		3/8	1/2	3/4	1	1¼	1½	2	2	2½
		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	120	180
	0,2	5	11	19	31	46	99	145	145	210
	0,3	6	13	23	35	55	112	160	160	240
	0,5	7	16	28	46	70	140	200	200	300
	0,75	9	20	35	57	85	175	250	250	370
	1	11	25	42	68	100	210	300	300	450
	1,5	14	32	55	90	140	280	400	400	590
	2	17	40	70	115	170	350	520	520	750
	2,5	21	47	84	135	200	400	600	600	880
	3	24	55	99	155	240	480	700	700	1020
	4	31	70	123	195	300	600	890	890	1300
	5	38	85	150	245	360	740	1080	1080	1600
	6	46	104	185	300	450	900	1340	1340	1950
	7	54	122	225	350	540	1100	1600	1600	2400
	8	62	140	250	400	600	1250	1800	1800	2700

a) To the defination of the right valve size according to the table, the initial pressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{initial pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

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for steam, gases and liquids, for very low reduced pressure

Typ 84

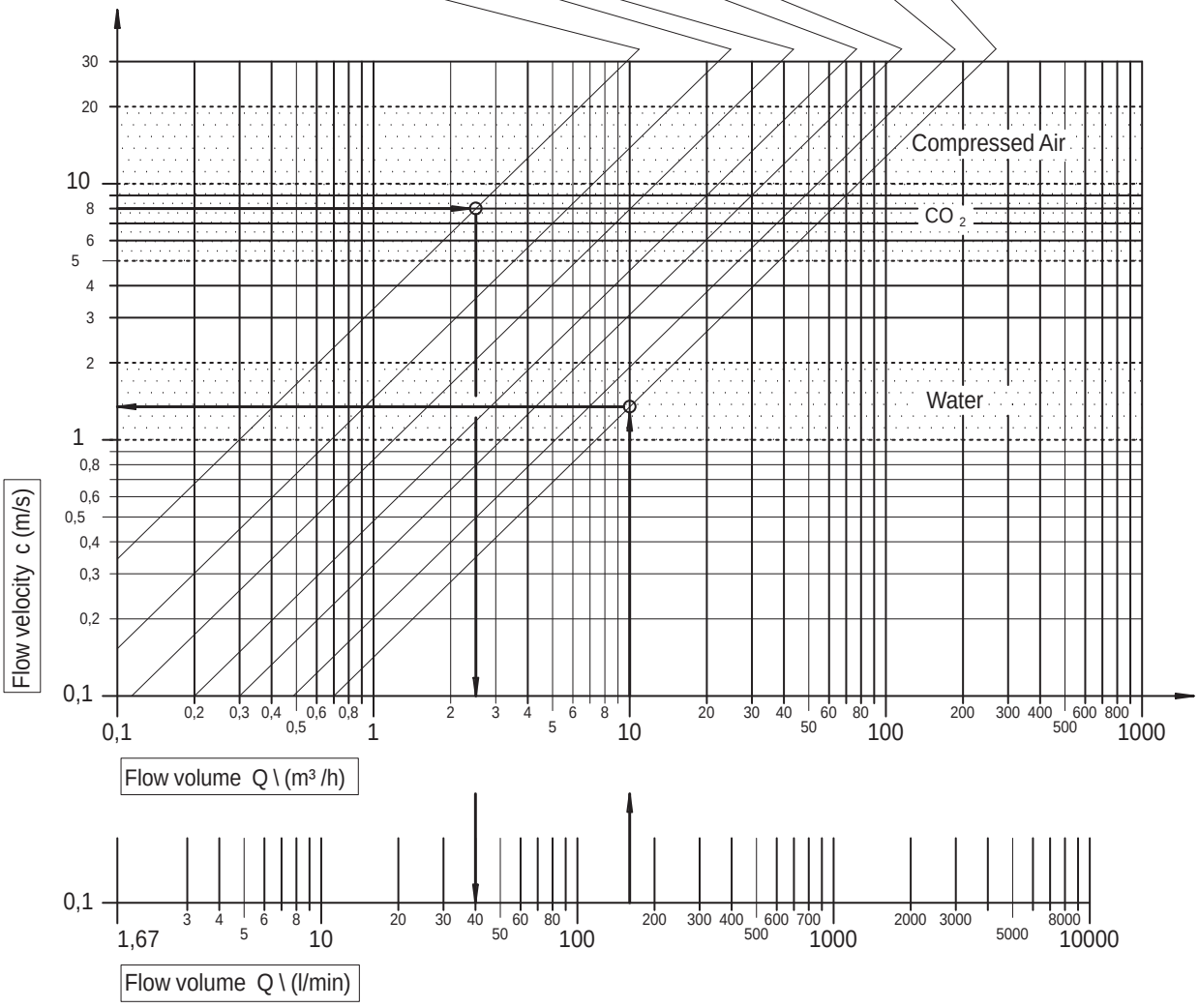
Troughput diagram for pressure initial contoller

(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

Size	0			I			II			III			III B	
Inlet / Outlet	DN 8	DN 10	DN 15	DN 15	DN 20	DN 25	DN 25	DN 32	DN 40	DN 40	DN 50	DN 65	DN 50	DN 65
	1/4	3/8	1/2	1/2	3/4	1	1	1 1/4	1 1/2	1 1/2	2	2 1/2	2	2 1/2
K_{VS}- Wert	1,2	2	2,2	3	3,2	3,5	6,3	6,5	6,7	12,5	13	13,5	27,5	28



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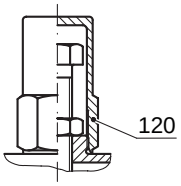
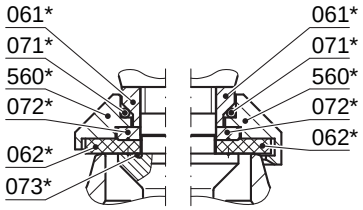
Typ 84

Typ 84.2 : Wst. / Material 1.4301
Typ 84.2 : Wst. / Material 1.4571

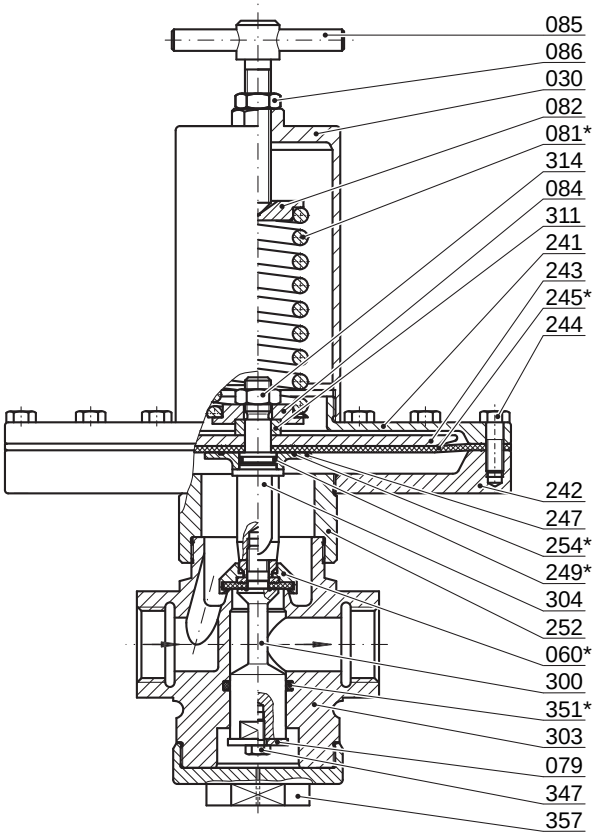
G 1/4, 3/8, 1/2, 3/4,
1, 1¼, 1½, 2, 2½



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4571	243	1 upper clamp plate	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	244	16 screws	A2	A2
060*	1 disc, complete			245*	1 diaphragm	EPDM	EPDM
560*	1 disc	1.4571	1.4571	247	1 lower clamp plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	249*	1 o-ring	FPM [1]	FPM [1]
062*	1 soft sealing	see techn. appendix: KWD-1		252	1 adapter	1.4571	1.4571
071*	1 o-ring	FPM [1]	FPM [1]	254*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4571
073*	1 o-ring	FPM [1]	FPM [1]	304	1 inlet pressure piston	1.4571	1.4404
079	1 lift stopper	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	347	1 screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	351*	1 o-ring	FPM [1]	FPM [1]
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4571
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				
241	1 upper housing	1.4571	1.4571				
242	1 lower housing	1.4571	1.4571				

* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

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Initial-Pressure-Controller, springloaded

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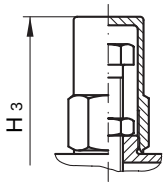
for steam, gases and liquids, for very low reduced pressure

Typ 85

Typ 85.2 : Wst. / Material 1.4301
Typ 85.2 : Wst. / Material 1.4571

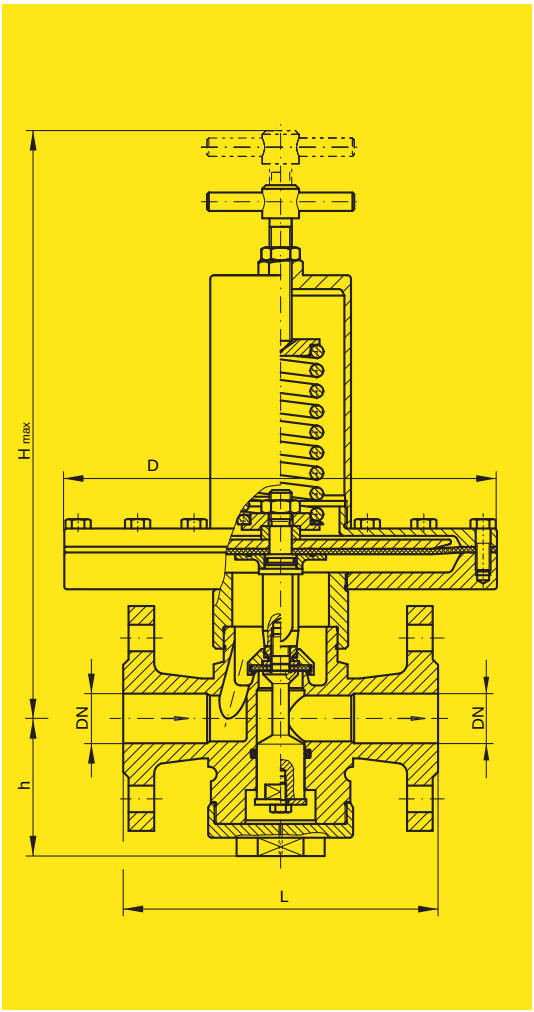
Industrie - Ausführung / Industry - design

Gegendruckunabhängig / Back pressure independent



Vordruckregler mit Schutzkappe
auf Anfrage

Valve with top cap
on request



Verwendung / Use

Betriebstemperatur / operating temperature

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions								Gewicht Weight
	DN		Vordruckbereich** P_1 initial pressure range** P_1	DN		Membran- D diaphragm- D Ausführung/Design				L	H_{max}	H_3	h	
	DIN	ANSI	minimal / maximal	DIN	ANSI									
	[mm]		[bar(g)]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
0	10 15*	- 1/2*	0,004 / 0,98	10 15*	- 1/2*	405	310	235	190	130	270	265	59	11,3
I	15 20	1/2 3/4	0,004 / 0,94	15 20	1/2 3/4					130 150	280	275	67	12,7 14,9
II	25 32	1 1¼	0,004 / 0,90	25 32	1 1¼					160 180	300	295	75	14,6 17,8
III [1)]	40 50	1½ 2	0,004 / 0,91	40 50	1½ 2					200 230	340	335	90	22,3 25,5
III B [1)]	50 65 80	2 2½ 3	0,004 / 0,46	50 65 80	2 2½ 3					300 290 310	560	540	112	

* Sondergröße / special size

** Einstellbereiche des Vordruckes siehe Rückseite (VDT-85) / spring range for initial pressure see over-leaf (VDT-85)

[1)] Nur in Werkstoff-Ausführung 1.4571 / only material-design 1.4571

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 85

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

Baugröße / Size	0	I	II	III	III B
Eintr./Austr.	DN 10, DN 15	DN 15, DN 20	DN 25, DN 32	DN 40, DN 50	DN 65, DN 80
Inlet/Outlet	3/8, 1/2	1/2, 3/4	1, 1¼	1½, 2	2½, 3
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]				
	0,004 - 0,0078	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,007 - 0,013	0,007 - 0,013	0,006 - 0,012	0,006 - 0,011	0,006 - 0,012
Ø 405	0,012 - 0,023	0,011 - 0,022	0,01 - 0,02	0,095 - 0,019	0,01 - 0,02
	0,02 - 0,04	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,036
	0,033 - 0,066	0,032 - 0,063	0,03 - 0,058	0,028 - 0,055	0,03 - 0,059
	0,05 - 0,1	0,050 - 0,099	0,046 - 0,091	0,043 - 0,086	0,046 - 0,092
	0,015 - 0,027	0,015 - 0,026	0,015 - 0,024	0,015 - 0,022	0,015 - 0,025
	0,025 - 0,046	0,023 - 0,044	0,021 - 0,041	0,019 - 0,038	0,021 - 0,042
Ø 310	0,04 - 0,08	0,039 - 0,077	0,036 - 0,072	0,034 - 0,068	0,037 - 0,074
	0,07 - 0,133	0,065 - 0,128	0,06 - 0,12	0,056 - 0,112	0,061 - 0,122
	0,11 - 0,21	0,1 - 0,2	0,093 - 0,185	0,088 - 0,175	0,096 - 0,191
	0,05 - 0,06	0,05 - 0,058	0,05 - 0,094	0,045 - 0,09	0,05 - 0,102
	0,05 - 0,1	0,05 - 0,1	0,083 - 0,165	0,08 - 0,16	0,091 - 0,181
Ø 235	0,09 - 0,18	0,088 - 0,176	0,137 - 0,273	0,132 - 0,264	0,15 - 0,3
	0,15 - 0,30	0,146 - 0,291	0,213 - 0,426	0,206 - 0,411	0,233 - 0,465
	0,24 - 0,47	0,227 - 0,454			
	0,11 - 0,22	0,1 - 0,21	0,1 - 0,2	0,1 - 0,2	
	0,19 - 0,38	0,19 - 0,37	0,18 - 0,35	0,18 - 0,35	
Ø 190	0,32 - 0,63	0,3 - 0,6	0,28 - 0,58	0,29 - 0,58	
	0,5 - 0,98	0,48 - 0,94	0,45 - 0,9	0,46 - 0,91	

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request

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Initial-Pressure-Controller, springloaded

für Dämpfe, Gase und Flüssigkeiten, für sehr kleinen Minderdruck
for steam, gases and liquids, for very low reduced pressure

Typ 85

Discharge capacities
for saturated steam

for definition the size of Initial-Pressure-Controller

Size		0	I		II		III		III B	
Over-pressure $p_ü$ [bar(g)] / Nominal pipe		10	15	20	25	32	40	50	65	80
		3/8	1/2	3/4	1	1¼	1½	2	2½	3
		kg/h								
t_{max} 200 °C	0,15	4	10	17	27	40	83	120	180	260
	0,2	5	11	19	31	46	99	145	210	310
	0,3	6	13	23	35	55	112	160	240	360
	0,5	7	16	28	46	70	140	200	300	440
	0,75	9	20	35	57	85	175	250	370	560
	1	11	25	42	68	100	210	300	450	680
	1,5	14	32	55	90	140	280	400	590	880
	2	17	40	70	115	170	350	520	750	1120
	2,5	21	47	84	135	200	400	600	880	1310
	3	24	55	99	155	240	480	700	1020	1540
	4	31	70	123	195	300	600	890	1300	1900
	5	38	85	150	245	360	740	1080	1600	2400
	6	46	104	185	300	450	900	1340	1950	2900
	7	54	122	225	350	540	1100	1600	2400	3400
	8	62	140	250	400	600	1250	1800	2700	4000

a) To the defination of the right valve size according to the table, the initial pressure is considerably. The usual piping speeds are appropriate for the table codes.

b) The valve size determined under a) can be selected around a nominal size smaller, if it is noted that the pipe diameter at the valve outlet is increased around at least one nominal size.

To small pressure ratios applies:

$$\frac{\text{initial pressure } p \text{ [bar]}}{\text{absolute inlet pressure } p \text{ [bar]}}$$

- ≥ 0,7 => correction factor = 1,25
- ≥ 0,8 => correction factor = 1,60
- ≥ 0,9 => correction factor = 2,25

$$\dot{m}_D = \dot{m}^1_D \circ f$$

The found correction factor must be multiplied due to the smaller flow rate by the given mass flow. With the help of the calculated value now a valve can be determinend in accordance with the table.
With smaller pressure ratios than 0.7 no correcton factor is used.

For superheated steam:

$$\dot{m}_D = \frac{V_H}{V_S} \circ \dot{m}^1_D \circ f$$

Gaskets for steam:

P_1 < 4 [bar(g)] (<150°C): Piston gasket PTFE
Gasket ring EPDM

P_1 < 15 [bar(g)] (<200°C): Piston gasket PTFE
Gasket ring AF 100

* V_H: specific volume of the superheated steam
* V_S: specific volume of the saturated steam
f : correction factor
$\dot{m}^1_D$: given mass flow
$\dot{m}_D$: resulting value of the mass flow, with that the table can be used.

* see VDI Steam table

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for steam, gases and liquids, for very low reduced pressure

Typ 85

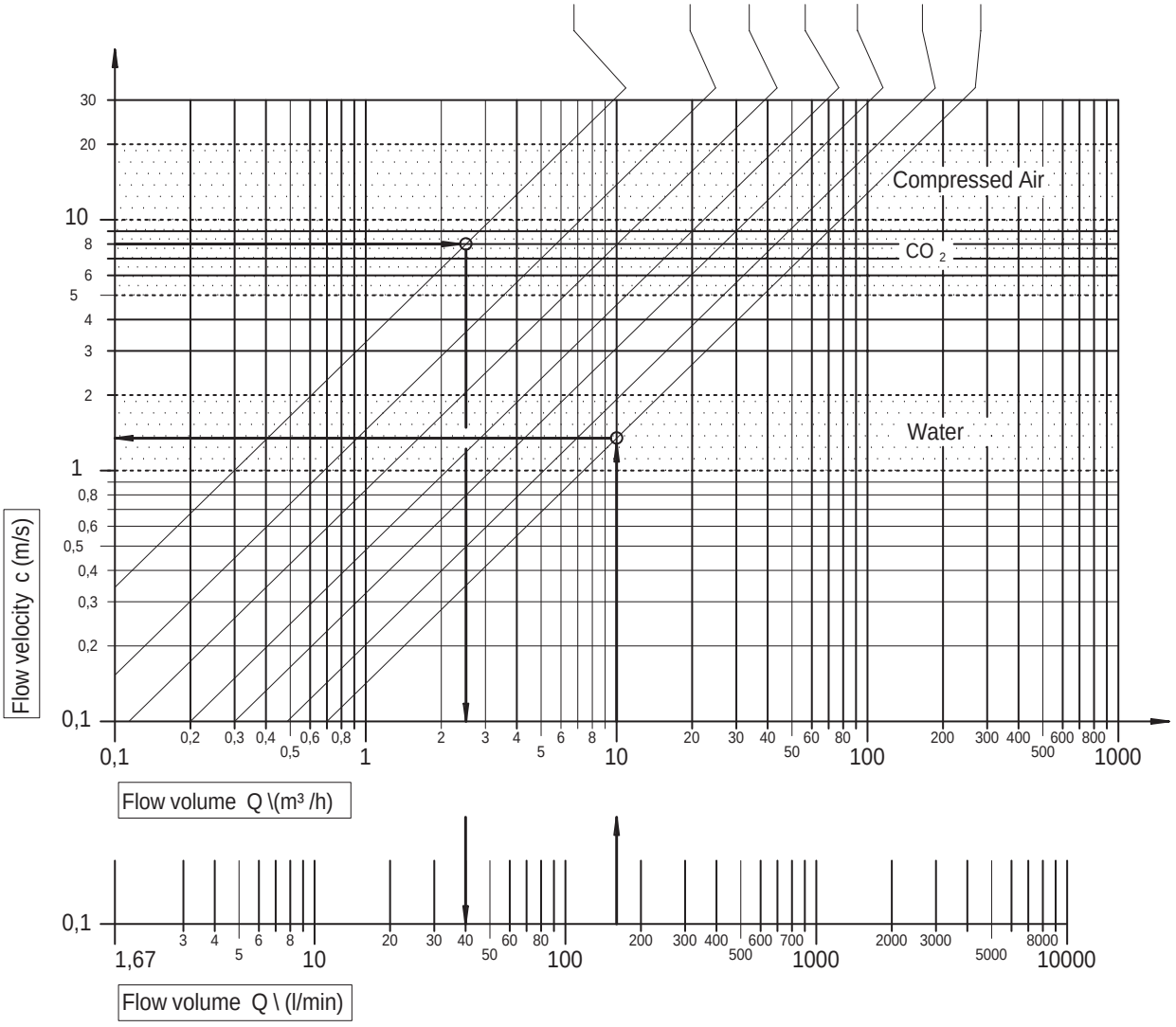
Troughput diagram for pressure initial contoller

(gasiform medium, liquids)

a) The corresponding valve size is, under assistance of the normal piping velocity, to calculate out of the diagram.

b) The valve size, which is calculated under a), can be select one nominal size smaller, if at the piping oulet the valve size will be extend one nominall size greater.

BG	0		I		II		III		III B	
Eintr./Austr.	DN 10	DN 15	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
	3/8	1/2	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
K_{VS}- Wert	2	2,2	3	3,2	6,3	6,5	12,5	13	28	28,5



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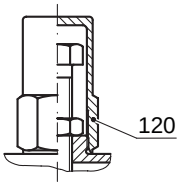
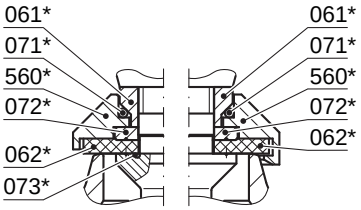
Typ 85

Typ 85.2 : Wst. / Material 1.4301
Typ 85.2 : Wst. / Material 1.4571

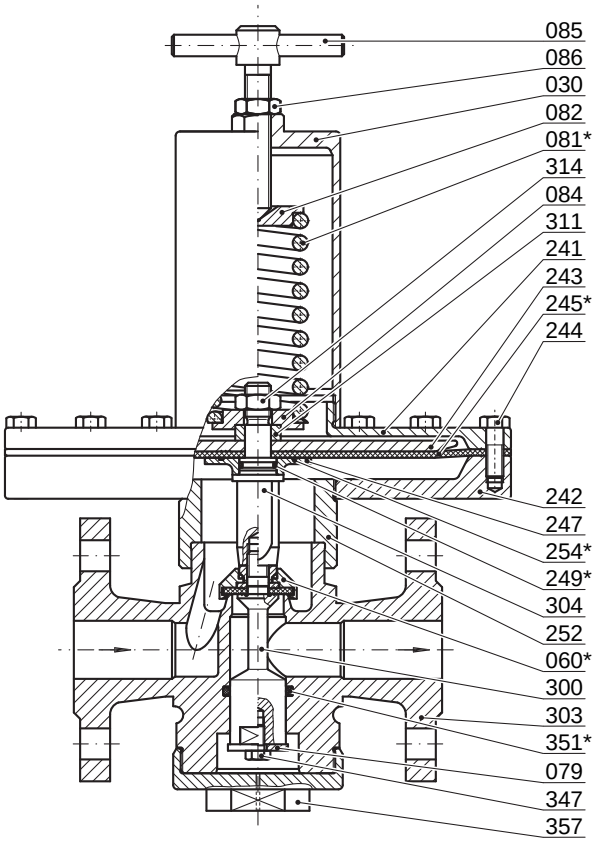
DN 10, 15, 20, 25, 32,
40, 50, 65, 80



Valve with top cap
on request



disc complete, pos. 060*
Thermoplast seated Elastomer seated



Item	Description	Material		Item	Description	Material	
303	1 valve body with flanges	1.4301	1.4571	243	1 upper clamp plate	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	244	16 screws	A2	A2
060*	1 disc, complete			245*	1 diaphragm	EPDM	EPDM
560*	1 disc	1.4571	1.4571	247	1 lower clamp plate	1.4571	1.4571
061*	1 pressure piece	1.4571	1.4571	249*	1 o-ring	FPM [1]	FPM [1]
062*	1 soft sealing	see techn. appendix: KWD-1		252	1 adapter	1.4571	1.4571
071*	1 o-ring	FPM [1]	FPM [1]	254*	1 o-ring	FPM [1]	FPM [1]
072*	1 locking ring	1.4571	1.4571	300	1 piston	1.4571	1.4571
073*	1 o-ring	FPM [1]	FPM [1]	304	1 inlet pressure piston	1.4571	1.4404
079	1 lift stopper	1.4571	1.4571	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	347	1 screw	A4	A4
084	1 springplate, lower	1.4305	1.4305	351*	1 o-ring	FPM [1]	FPM [1]
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4571
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				
241	1 upper housing	1.4571	1.4571				
242	1 lower housing	1.4571	1.4571				

* expendable parts

[1] other materials on request

size III + III B only material-design 1.4571

4'07

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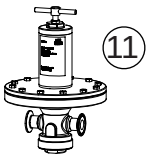
Vordruckregler, für Lebensmittel - Pharmazie
Initial-Pressure-Controller, Food - pharmacy



Inhaltsverzeichnis
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Ventil Valve	Verwendung Use	Medium	DN mm		P_1 bar
Typ 80 SKK	Edelstahl-Vordruckregler Stainless Steel-Initial Pressure Controller	D/G/F	8 - 15 1/4 - 1/2		0,35 - 62,0
Typ 80 SKS	Edelstahl-Vordruckregler Stainless Steel-Initial Pressure Controller	D/G/F	15 - 80 1/2 - 3		0,25 - 60,0
Typ 80 SMK	Edelstahl-Vordruckregler Stainless Steel-Initial Pressure Controller Membranventil / diaphragm valve	D/G/F	8 - 15 1/4 - 1/2		0,004 - 0,98
Typ 80 SMS	Edelstahl-Vordruckregler Stainless Steel-Initial Pressure Controller Membranventil / diaphragm valve	D/G/F	15 - 80 1/2 - 3		0,004 - 0,94

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

Vordruck / inlet pressure..... - P_1 -

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, nachdruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm
- Vordrücke P_2 < 0,35 bar, siehe Baureihe SMK

Werkstoffe:

- 1.4301
- 1.4435

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_80 SKK)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm
- Initial pressures P_2 < 0,35 bar, see series SMK

Materials:

- 1.4301
- 1.4435

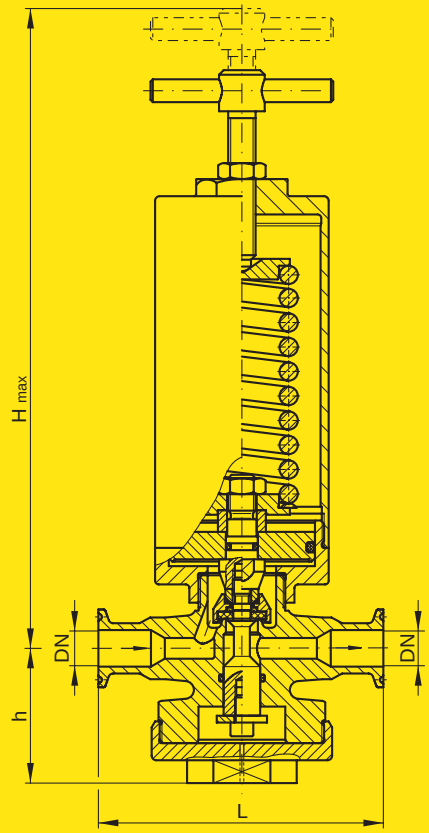
Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

Options:

- CIP able design
- Air loaded
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_80 SKK)



andere Anschlussformen siehe (A 80 SKK)
other connections see (A 80 SKK)

BG Size	Eintritt Inlet				Austritt Outlet		Baumaße Dimensions				K_{VS} Wert
			Vordruckbereich** P_1 initial pressure range** P_1								
	DN	NPS	minimal	maximal	DN	NPS	L	H_{max}	h	H_3	
	[mm]		[bar(g)]		[mm]		[mm]	[mm]	[mm]	[mm]	[m³/h]
0	8	1/4	0,35	62,0	8	1/4	siehe / see (A 80 SKK)			267	1,2
	10	3/8			10	3/8					2,0
	15	1/2			15	1/2					2,2

** Einstellbereiche des Vordruckes siehe Rückseite (VDT-80 SKK) / spring range for initial pressure see over-leaf (VDT-80 SKK)

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

BG / Size	0
Eintr./Austr.	DN 8, DN 10, DN 15
Inlet/Outlet	1/4, 3/8, 1/2
Kolbenplatte piston plate [mm]	Einstellbereich spring range [mm]
	0,35 - 0,59
	0,50 - 1,05
Ø 64	0,90 - 1,72
	1,40 - 2,70
	2,10 - 4,18
	3,00 - 6,00
	2,50 - 5,00
Ø 48	3,90 - 7,80
	5,50 - 11,20
	7,20 - 14,40
	4,40 - 8,70
	6,80 - 13,50
Ø 38	9,70 - 19,20
	12,40 - 24,80
	11,00 - 21,90
	17,00 - 34,00
Ø 27	24,00 - 48,00
	31,00 - 62,00

größere Vordruckbereiche auf Anfrage /
expanded initial pressure range on request

1'06

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

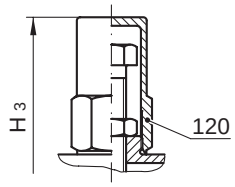
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

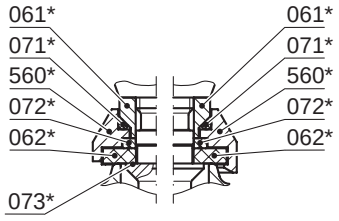
Typ 80.2 - SKK: Wst. / Material 1.4301
Typ 80.2 - SKK: Wst. / Material 1.4435

DN 8, 10, 15

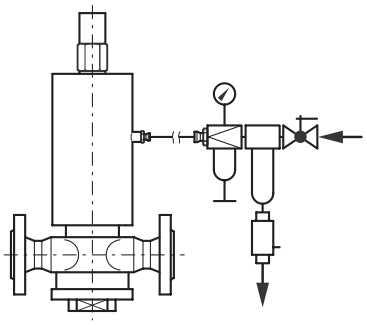
Options:



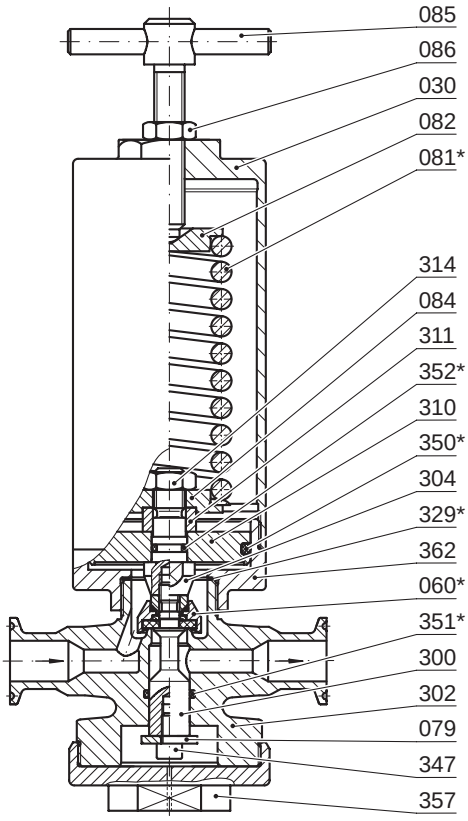
Valve with top cap
(Option AC)



disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected initial pressure by air loading
design of the bonnet.
(Option EA)



Item	Description	Material		Item	Description	Material	
302	1 valve body	1.4301	1.4435 [1]	300	1 piston	1.4571	1.4404
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4404
060*	1 disc, complete			310	1 piston plate	1.4571	1.4404
560*	1 disc	1.4571	1.4404	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4404	314	1 lock nut	A4	A4
062*	1 soft sealing	EPDM [2]	EPDM [2]	329*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
071*	1 o-ring	EPDM	EPDM	347	1 screw	A4	1.4404
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
073*	1 o-ring	EPDM	EPDM	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
079	1 lift stopper	1.4571	1.4404	352*	1 o-ring	EPDM	EPDM
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4404
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4404
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

I 01'06

* expendable parts

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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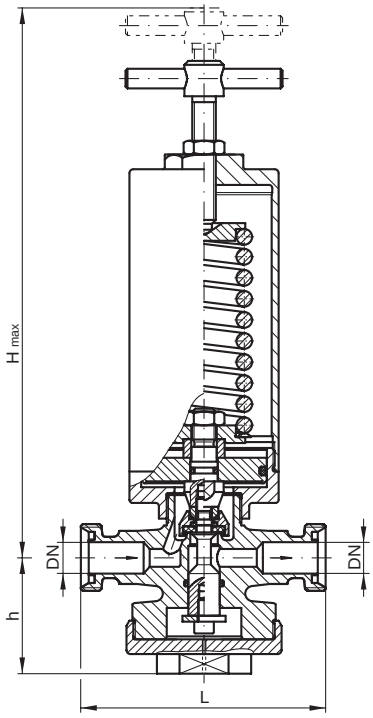
Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

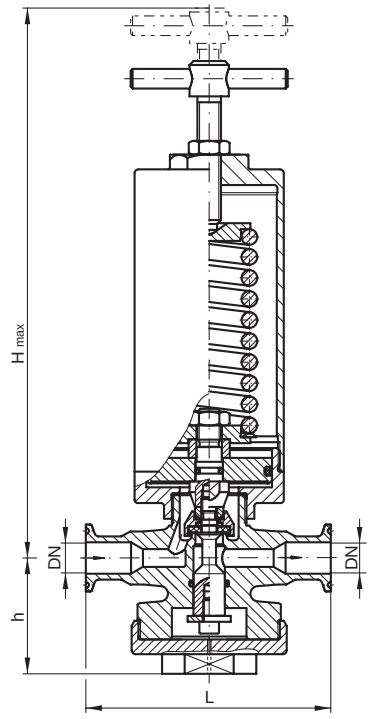
Anschlüsse / Connections



Baureihe / Series: SKK-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	Rd 28x1/8	272	59	115	-
	15	Rd 34x1/8	272	59	115	-



Baureihe / Series: SKK-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	⅜	272	59	115	-
	15	½	272	59	115	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

06

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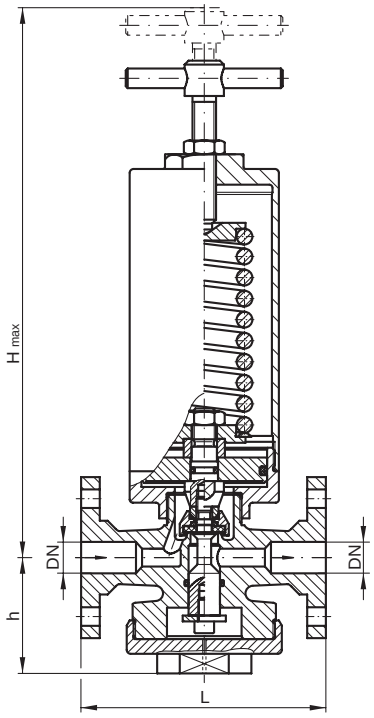
Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

Anschlüsse / Connections

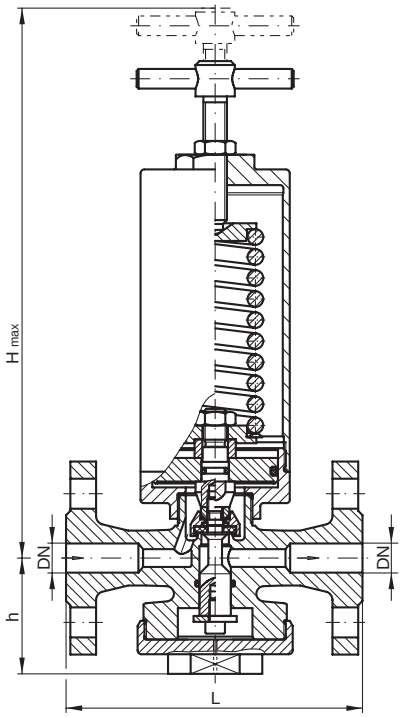


Baureihe / Series: SKK-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	⅜	272	59	115	-
	15	½	272	59	115	-

* vorzugsweise Glatt- bzw. Bundflansche am VDR.



Baureihe / Series: SKK-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	10	-	272	59	130	5,5
	15	½	272	59	130	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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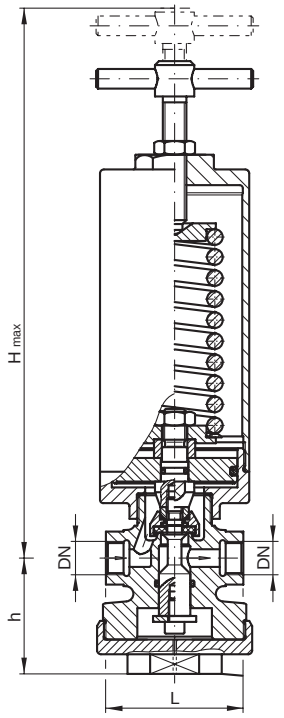
Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

Anschlüsse / Connections



Baureihe / Series: SKK-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
0	8	¼	272	59	115	-
	10	⅜	272	59	115	-
	15	½	272	59	115	3,7

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKK

Optionen / Options

AC) Vordruckregler mit Einstellschraube und Schutzkappe.	**AC)** Initial pressure controller adjusting screw and protective cap.
AD) Entlastungsbohrung in der Federhaube.	**AD)** Relief drill hole in the spring bonnet.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
DA) Federhaube für Tafeleinbau einschließlich 2 Edelstahl-Befestigungsmuttern, Vierkantspindel mit abnehmbarem Isolierstoff-Handrad.	**DA)** Bonnet for panel installation including 2 stainless steel - attaching nut, square spindle with removable insulant handwheel.
EA) Vordruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected initial pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert. **FB)** Vordruckregler komplett außen elektropoliert. **FC)** Durchflussgehäuse außen glasperlengestrahlt. **FD)** Vordruckregler komplett außen glasperlengestrahlt. **FE)** Vordruckregler außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FA)** Body outside electropolished. **FB)** Initial pressure controller completely outside electropolished. **FC)** Body outside glass blasted. **FD)** Initial pressure controller completely outside glass blasted. **FE)** Initial pressure controller completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm. **GB)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm. **GC)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm. **GD)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm. **GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm. **GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm. **GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.

06

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKS

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel, nachdruckunabhängig
- Dichtschließend bei 0-Verbrauch
- Kolbensteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm
- Vordrücke P_2≤ 0,15 / 0,25 / 0,35 bar, siehe Baureihe SMS

Werkstoffe:

- 1.4301 / 1.4571
- 1.4435 / 1.4404

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

Optionen:

- CIP-fähige Ausführung
- Pneumatische Auflastung
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_80 SKS)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc, initial pressure independently
- Tight with zero-consumption
- Piston controled
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm
- Initial pressures P_2≤ 0,15 / 0,25 / 0,35 bar, see series SMS

Materials:

- 1.4301 / 1.4571
- 1.4435 / 1.4404

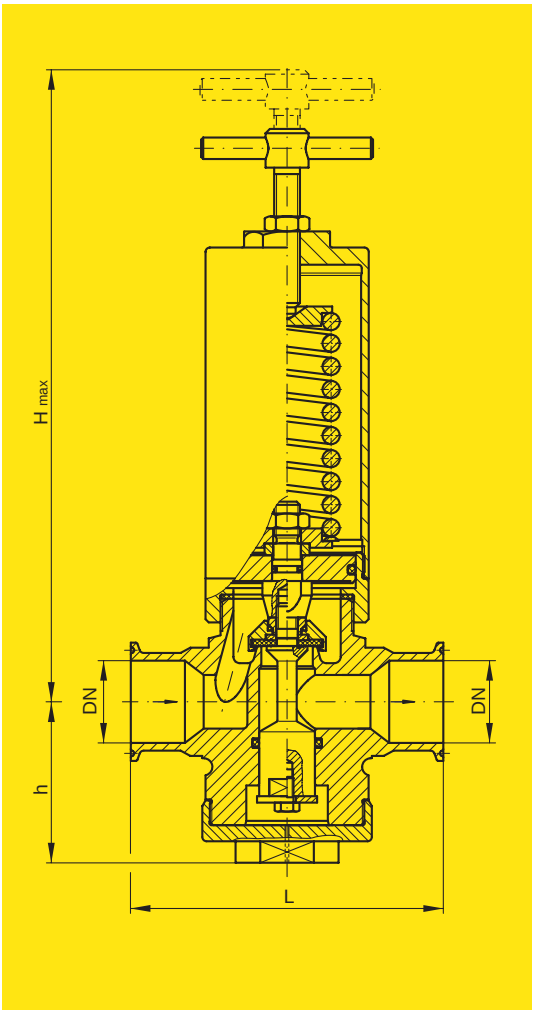
Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

Options:

- CIP able design
- Air loaded
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_80 SKS)



andere Anschlussformen siehe (A 80 SKS)
other connections see (A 80 SKS)

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions				K_{VS} Wert
	DN	NPS	Vordruckbereich** P_1 initial pressure range** P_1 minimal / maximal	DN	NPS	L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[mm]	[mm]	[mm]	[mm]	[m³ /h]
I	15 20 25 (S) 32 (S)	1/2 3/4 1 (S) 1¼ (S)	0,35 / 60,0	15 20 25 (S) 32 (S)	1/2 3/4 1 (S) 1¼ (S)	siehe / see (A 80 SKS)			262	3,0 3,2 3,5
II	25 (G) 32 (G) 40 (S) 50 (S) 65 (S)	1 (G) 1¼ (G) 1½ (S) 2 (S) 2½ (S)	0,25 / 47,0	25 (G) 32 (G) 40 (S) 50 (S) 65 (S)	1 (G) 1¼ (G) 1½ (S) 2 (S) 2½ (S)				268	6,3 6,5 6,7 7,0 7,5
III 1)	40 (G) 50 (G) 65 (G) 80 (S)	1½ (G) 2 (G) 2½ (G) 3 (S)	0,25 / 50,0	40 (G) 50 (G) 65 (G) 80 (S)	1½ (G) 2 (G) 2½ (G) 3 (S)				315	12,5 13,0 13,5 14,0
III B 1)	50 (G) 65 (G) 80 (G)	2 (G) 2½ (G) 3 (G)	0,25 / 19,5	50 (G) 65 (G) 80 (G)	2 (G) 2½ (G) 3 (G)				520	27,5 28,0 28,5

** Einstellbereiche des Vordruckes siehe Rückseite (VDT-80 SKS) / spring range for initial pressure see over-leaf (VDT-80 SKS)

1) Nur in Werkstoff-Ausführung 1.4435 / only material design 1.4435

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKS

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

BG / Size	I	II	III	III B
Eintr./Austr.	DN 15, 20, 25, 32	DN 25, 32, 40, 50, 65	DN 40, 50, 65, 80	DN 50, 65, 80
Inlet/Outlet	1/2, 3/4, 1, 1¼	1, 1¼, 1½, 2, 2½	1½, 2, 2½, 3	2, 2½, 3
Kolbenplatte piston plate [mm]	Einstellbereich spring range [bar(g)]			
				0,25 - 0,54
				0,45 - 0,90
Ø 119				0,70 - 1,37
				1,02 - 2,04
				1,65 - 3,30
				2,40 - 4,80
			0,25 - 0,55	1,10 - 2,20
Ø 99			0,43 - 0,85	1,65 - 3,30
			0,68 - 1,35	2,65 - 5,30
			1,20 - 2,40	3,90 - 7,70
			1,40 - 2,70	
		0,25 - 0,55	0,41 - 0,82	2,70 - 5,40
		0,46 - 0,92	0,65 - 1,27	4,30 - 8,60
Ø 84		0,72 - 1,44	1,00 - 2,00	6,30 - 12,60
		1,10 - 2,20	1,80 - 3,50	7,40 - 14,70
		1,60 - 3,10	2,00 - 4,00	9,80 - 19,50
		2,00 - 4,00		
	0,35 - 0,57	1,40 - 2,70	1,40 - 2,70	
	0,50 - 1,00	2,00 - 4,10	2,20 - 4,30	
Ø 64	0,80 - 1,60	2,90 - 5,80	3,70 - 7,40	
	1,30 - 2,60	3,70 - 7,40	4,30 - 8,50	
	2,00 - 4,00			
	2,90 - 5,70			
	2,40 - 4,80	2,80 - 5,60	4,10 - 8,20	
Ø 48	3,60 - 7,50	4,40 - 8,70	6,60 - 13,10	
	5,40 - 10,70	6,10 - 12,20	11,50 - 23,00	
	6,90 - 13,70	7,80 - 15,50	13,00 - 26,00	
			17,00 - 33,00	
			25,00 - 50,00	
	4,20 - 8,40	6,00 - 12,00		
	6,50 - 13,00	10,00 - 18,50		
Ø 38	9,20 - 18,40	13,00 - 26,00		
	12,00 - 23,70	17,00 - 33,00		
		22,00 - 44,00		
		24,00 - 47,00		
	10,50 - 21,00			
	17,00 - 33,00			
Ø 27	23,00 - 46,00			
	30,00 - 60,00			
	40,00 - 80,00 *			
	48,00 - 95,00 *			

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request
* nur für DN 15 / only DN 15

1'06

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

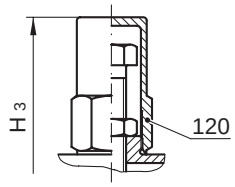
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SKS

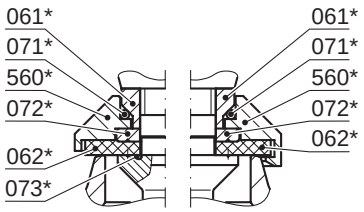
Typ 80.2 - SKS: Wst. / Material 1.4301
Typ 80.2 - SKS: Wst. / Material 1.4435

DN 15, 20, 25, 32, 40, 50, 65, 80

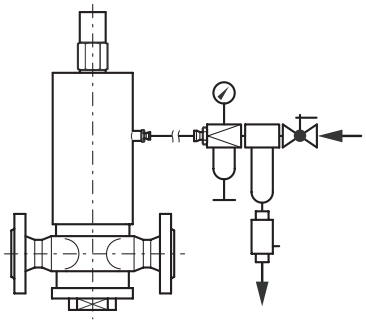
Options:



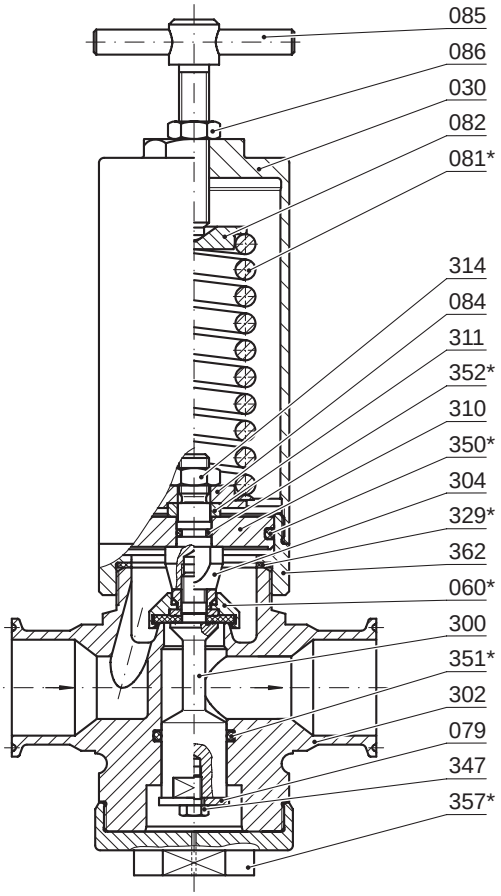
Valve with top cap
(Option AC)



disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected initial pressure by air loading
design of the bonnet.
(Option EA)



Item	Description	Material		Item	Description	Material	
302	1 valve body	1.4301	1.4435 [1]	300	1 piston	1.4571	1.4404
030	1 spring bonnet	1.4301	1.4301	304	1 inlet pressure piston	1.4571	1.4404
060*	1 disc, complete			310	1 piston plate	1.4571	1.4404
560*	1 disc	1.4571	1.4404	311	1 distance bush	1.4305	1.4305
061*	1 pressure piece	1.4571	1.4404	314	1 lock nut	A4	A4
062*	1 soft sealing	EPDM [2]	EPDM [2]	329*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
071*	1 o-ring	EPDM	EPDM	347	1 screw	A4	1.4404
072*	1 locking ring	1.4571	1.4571	350*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
073*	1 o-ring	EPDM	EPDM	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
079	1 lift stopper	1.4571	1.4404	352*	1 o-ring	EPDM	EPDM
081*	1 spring	1.4310	1.4310	357	1 bottom plug	1.4571	1.4404
082	1 springplate, upper	1.4305	1.4305	362	1 adapter	1.4571	1.4404
084	1 springplate, lower	1.4305	1.4305				
085	1 adjusting screw	1.4305	1.4305				
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				

I 0106

* expendable parts
size III + III B only material-design 1.4435

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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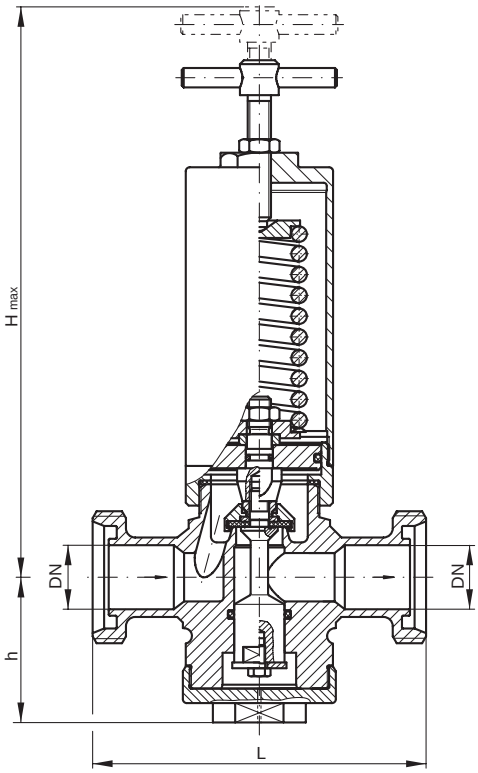
Typ 80 SKS

Anschlüsse / Connections

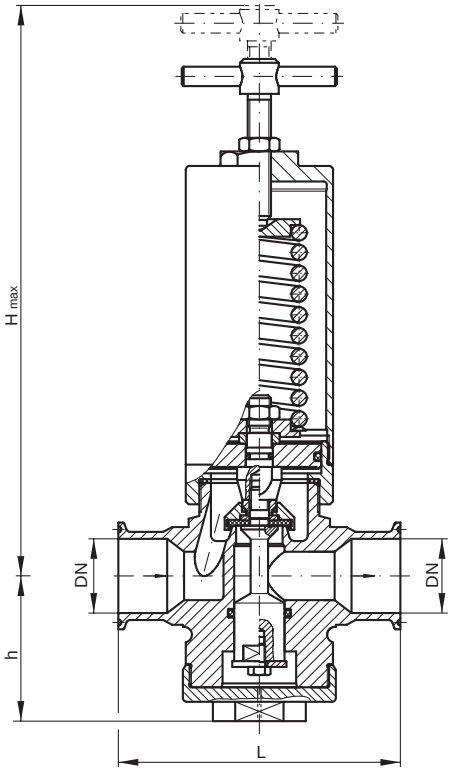


Baureihe / Series: SKS-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	Rd 34x1/8	282	67	129	-
	20	Rd 44x1/6	282	67	135	-
	25 (S)	Rd 52x1/6	282	67	145	-
	32* (S)	Rd 58x1/6	282	67	145	-
II	25 (G)	Rd 52x1/6	288	75	160	-
	32 (G)	Rd 58x1/6	288	75	166	-
	40 (S)	Rd 65x1/6	288	75	168	-
	50 (S)	Rd 78x1/6	288	75	170	-
	65* (S)	Rd 95x1/6	288	75	175	-
III	40 (G)	Rd 65x1/6	335	90	208	-
	50 (G)	Rd 78x1/6	335	90	212	-
	65 (G)	Rd 95x1/6	335	90	222	10,1
	80* (S)	Rd 110x1/4	335	90	235	-
III B	50 (G)	Rd 78x1/6	540	112	270	-
	65 (G)	Rd 95x1/6	540	112	280	-
	80 (G)	Rd 110x1/4	540	112	290	-

* Gilt nur für DIN 11851 / only for DIN 11851



Baureihe / Series: SKS-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	282	67	120	-
	20	¾	282	67	120	-
	25 (S)	1 (S)	282	67	130	-
II	25 (G)	1 (G)	288	75	145	-
	32	1¼	288	75	145	-
	40 (S)	1½ (S)	288	75	145	-
	50 (S)	2 (S)	288	75	145	-
III	40 (G)	1½ (G)	335	90	180	-
	50 (G)	2 (G)	335	90	180	-
	65 (S)	2½ (S)	335	90	180	-
III B	50 (G)	2 (G)	540	112	260	-
	65 (G)	2½ (G)	540	112	260	-
	80	3	540	112	260	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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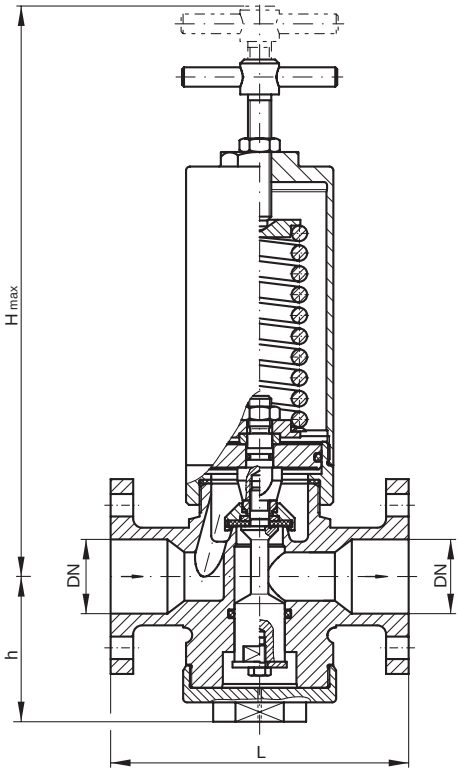
for steam, gases and liquids

Typ 80 SKS

Anschlüsse / Connections

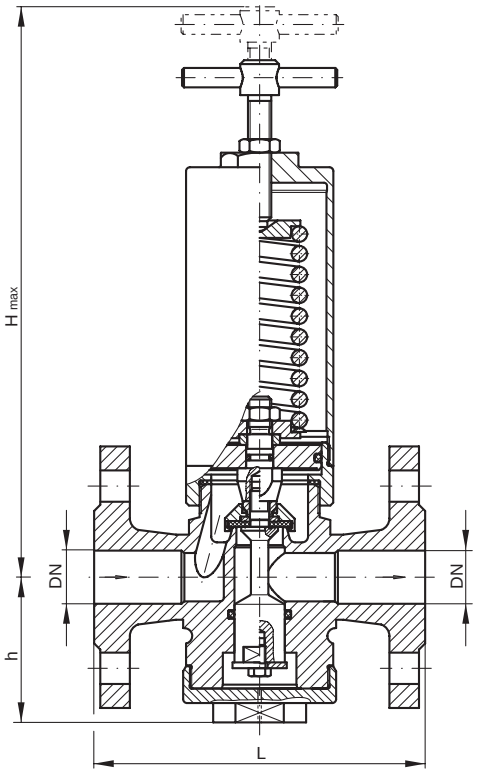


Baureihe / Series: SKS-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV (**APV**), Varivent (**VV**)

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	282	67	135	-
	20	¾	282	67	135	-
	25 (S)	1 (S)	282	67	135	5,5
II	25 (G)	1 (G)	288	75	150	-
	32	1¼	288	75	150	-
	40 (S)	1½ (S)	288	75	150	-
	50 (S)	2 (S)	288	75	150	-
III	40 (G)	1½ (G)	335	90	190	-
	50 (G)	2 (G)	335	90	190	12,0
	65 (S)	2½ (S)	335	90	190	-
III B	50 (G)	2 (G)	540	112	260	35,0
	65 (G)	2½ (G)	540	112	260	30,0
	80	3	540	112	260	-

* vorzugsweise Glatt- bzw. Bundflansche am VDR.



Baureihe / Series: SKS-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	282	67	130	-
	20	¾	282	67	150	-
	25 (S)	1 (S)	282	67	160	7,2
II	25 (G)	1 (G)	288	75	160	6,5
	32	1¼	288	75	180	-
	40 (S)	1½ (S)	288	75	200	9,2
	50 (S)	2 (S)	288	75	230	-
	65 (S)	2½ (S)	288	75	290	-
III	40 (G)	1½ (G)	335	90	200	13,0
	50 (G)	2 (G)	335	90	230	15,0
	65 (G)	2½ (G)	335	90	290	-
	80 (S)	3 (S)	335	90	310	-
III B	50 (G)	2 (G)	540	112	300	-
	65 (G)	2½ (G)	540	112	290	-
	80 (G)	3 (G)	540	112	310	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
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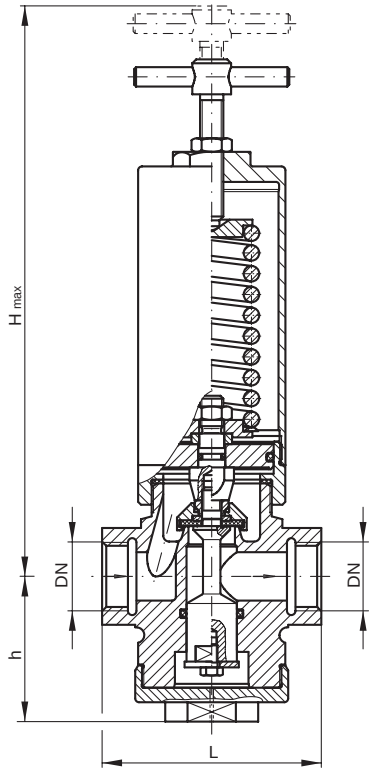
Typ 80 SKS

Anschlüsse / Connections



Baureihe / Series: SKS-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht Weight [kg]
I	15	½	282	67	90	-
	20	¾	282	67	90	4,6
	25 (S)	1 (S)	282	67	135	-
	32 (S)	1¼ (S)	282	67	140	-
II	25 (G)	1 (G)	288	75	105	-
	32 (G)	1¼ (G)	288	75	105	-
	40 (S)	1½ (S)	288	75	155	-
	50 (S)	2 (S)	288	75	185	-
III	40 (G)	1½ (G)	335	90	145	-
	50 (G)	2 (G)	335	90	145	-
	65 (S)	2½ (S)	335	90	210	-
III B	50 (G)	2 (G)	540	112	220	-
	65 (G)	2½ (G)	540	112	220	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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Typ 80 SKS

Optionen / Options

AC) Vordruckregler mit Einstellschraube und Schutzkappe.	**AC)** Initial pressure controller adjusting screw and protective cap.
AD) Entlastungsbohrung in der Federhaube.	**AD)** Relief drill hole in the spring bonnet.
BA) Gehäuse mit einer Manometerbohrung G ¼ auf angegebener Position.	**BA)** Body with one pressure gauge connection G ¼ on indicated position.
BB) Gehäuse beiderseits ohne Manometerbohrung G ¼.	**BB)** Body on both sides without pressure gauge connection G ¼.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
DA) Federhaube für Tafeleinbau einschließlich 2 Edelstahl-Befestigungsmuttern, Vierkantspindel mit abnehmbarem Isolierstoff-Handrad.	**DA)** Bonnet for panel installation including 2 stainless steel - attaching nut, square spindle with removable insulant handwheel.
EA) Vordruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected initial pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert. **FB)** Vordruckregler komplett außen elektropoliert. **FC)** Durchflussgehäuse außen glasperlengestrahlt. **FD)** Vordruckregler komplett außen glasperlengestrahlt. **FE)** Vordruckregler außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FA)** Body outside electropolished. **FB)** Initial pressure controller completely outside electropolished. **FC)** Body outside glass blasted. **FD)** Initial pressure controller completely outside glass blasted. **FE)** Initial pressure controller completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm. **GB)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm. **GC)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm. **GD)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm. **GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm. **GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm. **GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.
HA) CIP-fähig durch Zusatzausrüstungen nach unserem Schema 200 A / 209 B.	**HA)** CIP able by additional equipments according to our scheme 200 A / 209 B.

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Typ 80 SMK

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel
- Dichtschließend bei 0-Verbrauch
- Membransteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm

Werkstoffe:

- 1.4301
- 1.4435

Optionen:

- Pneumatische Auflastung

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)

- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_80 SMK)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc
- Tight with zero-consumption
- Diaphragm control
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm

Materials:

- 1.4301
- 1.4435

Options:

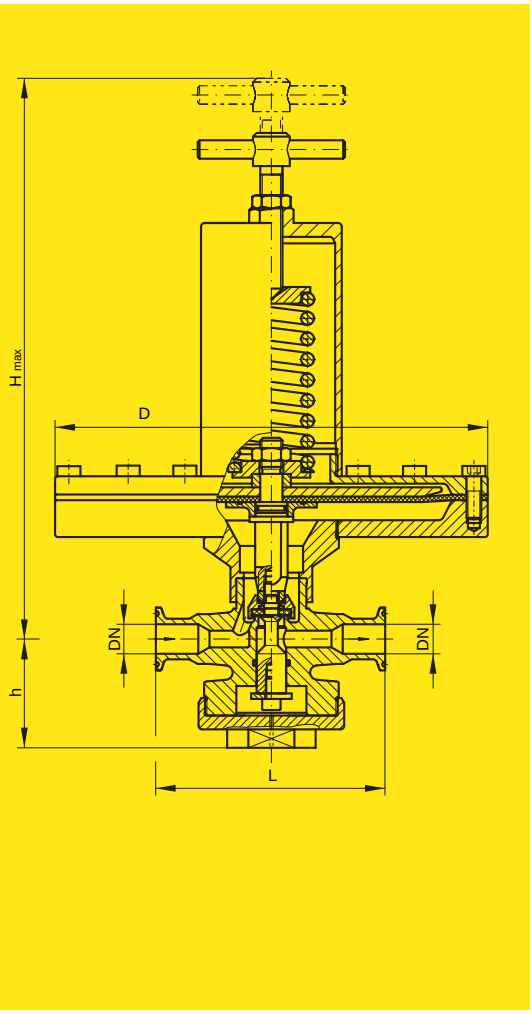
- Air loaded

Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)

- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_80 SMK)



andere Anschlussformen siehe (A 80 SMK)
other connections see (A 80 SMK)

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions								K_{VS} Wert
			Vordruckbereich** P_1 initial pressure range** P_1			Membran- D diaphragm- D Ausführung/Design								
	DN	NPS	maximal minimal	DN	NPS					L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m³/h]
0	8	1/4	0,004 / 0,98	8	1/4	405	310	235	190	siehe / see (A 80 SMK)			265	1,2
	10	3/8		10	3/8									2,0
	15	1/2		15	1/2									2,2

** Einstellbereiche des Vordruckes siehe Rückseite (VDT-80 SMK) / spring range for initial pressure see over-leaf (VDT-80 SMK)

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Typ 80 SMK

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

Baugröße / Size	0
Eintr./Austr.	DN 8, DN 10, DN 15
Inlet/Outlet	1/4, 3/8, 1/2
Membran diaphragm [mm]	
	0,004 - 0,0078
	0,007 - 0,013
Ø 405	0,012 - 0,023
	0,02 - 0,04
	0,033 - 0,066
	0,05 - 0,1
	0,015 - 0,027
	0,025 - 0,046
Ø 310	0,04 - 0,08
	0,07 - 0,133
	0,11 - 0,21
	0,05 - 0,06
	0,05 - 0,1
Ø 235	0,09 - 0,18
	0,15 - 0,30
	0,24 - 0,47
	0,11 - 0,22
	0,19 - 0,38
Ø 190	0,32 - 0,63
	0,5 - 0,98

größere Vordruckbereiche auf Anfrage /
expanded initial pressure range on request

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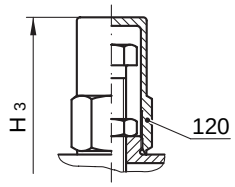
Typ 80 SMK

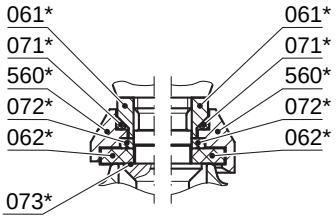
Typ 80.2 - SMK: Wst. / Material 1.4301
Typ 80.2 - SMK: Wst. / Material 1.4435

DN 8, 10, 15

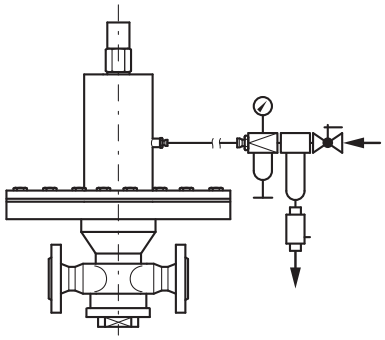
Options:



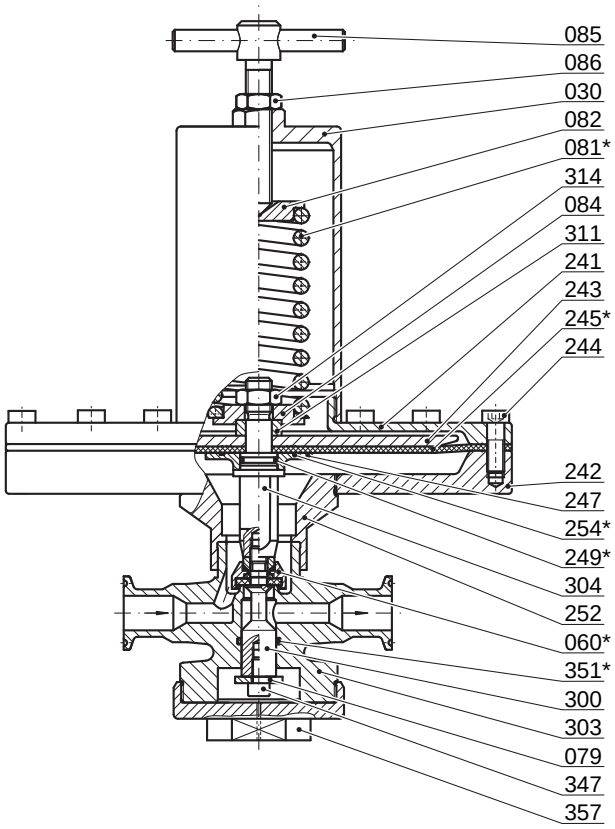
Valve with top cap
(Option AC)



disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected initial pressure by air loading
design of the bonnet.
(Option EA)



Item	Description	Material		Item	Description	Material	
303	1 valve body	1.4301	1.4435 [1]	243	1 upper clamp plate	1.4571	1.4571
030	1 spring bonnet	1.4301	1.4301	244	16 screws	A2	A2
060*	1 disc, complete			245*	1 diaphragm	EPDM	EPDM
560*	1 disc	1.4571	1.4404	247	1 lower clamp plate	1.4571	1.4404
061*	1 pressure piece	1.4571	1.4404	249*	1 o-ring	EPDM	EPDM
062*	1 soft sealing	EPDM [2]	EPDM [2]	252	1 adapter	1.4571	1.4404
071*	1 o-ring	EPDM	EPDM	254*	1 o-ring	EPDM	EPDM
072*	1 locking ring	1.4571	1.4571	300	1 inlet pressure piston	1.4571	1.4404
073*	1 o-ring	EPDM	EPDM	304	1 piston	1.4571	1.4404
079	1 lift stopper	1.4571	1.4404	311	1 distance bush	1.4305	1.4305
081*	1 spring	1.4310	1.4310	314	1 lock nut	A2	A2
082	1 springplate, upper	1.4305	1.4305	347	1 screw	A4	1.4404
084	1 springplate, lower	1.4305	1.4305	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
085	1 adjusting screw	1.4305	1.4305	357	1 bottom plug	1.4571	1.4404
086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				
241	1 upper housing	1.4571	1.4404				
242	1 lower housing	1.4571	1.4404				

* expendable parts

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

gl 04'07

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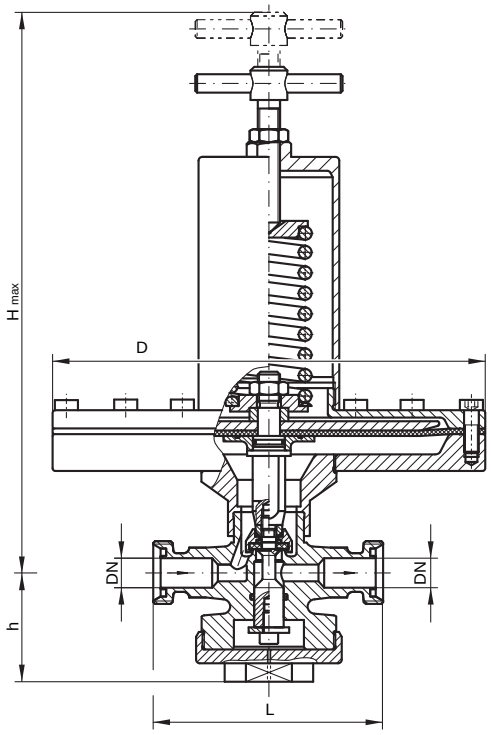
Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SMK

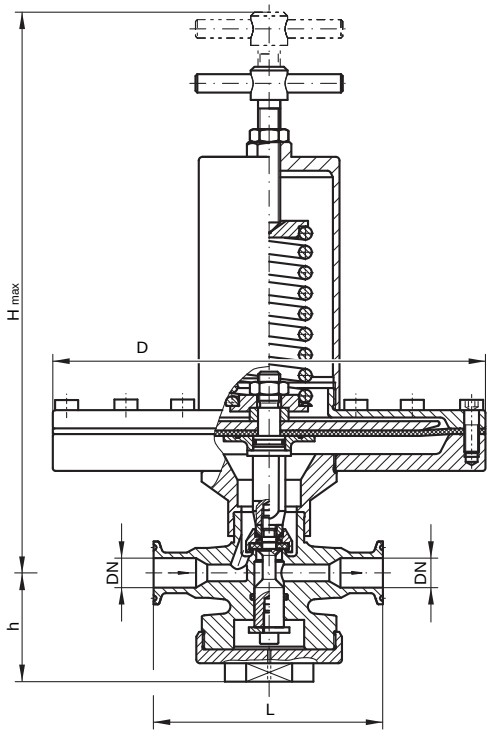
Anschlüsse / Connections



Baureihe / Series: SMK-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	Rd 28x1/8	270	59	115	-	-	-	-
	15	Rd 34x1/8	270	59	115	-	-	-	-



Baureihe / Series: SMK-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	⅜	270	59	115	-	-	-	-
	15	½	270	59	115	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

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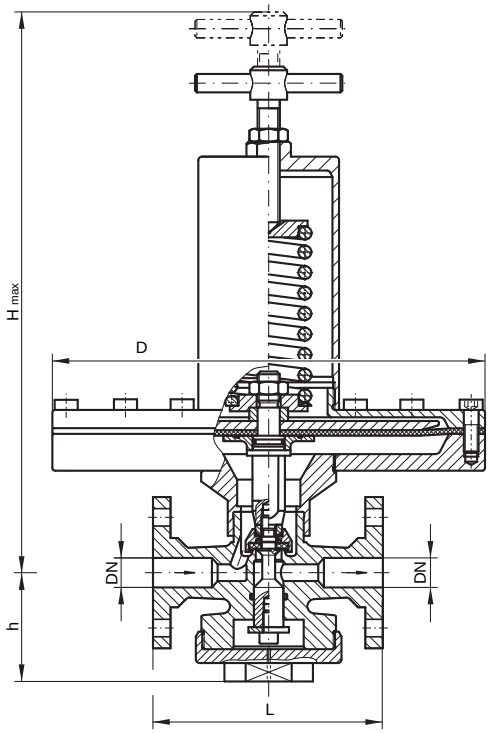
Typ 80 SMK

Anschlüsse / Connections

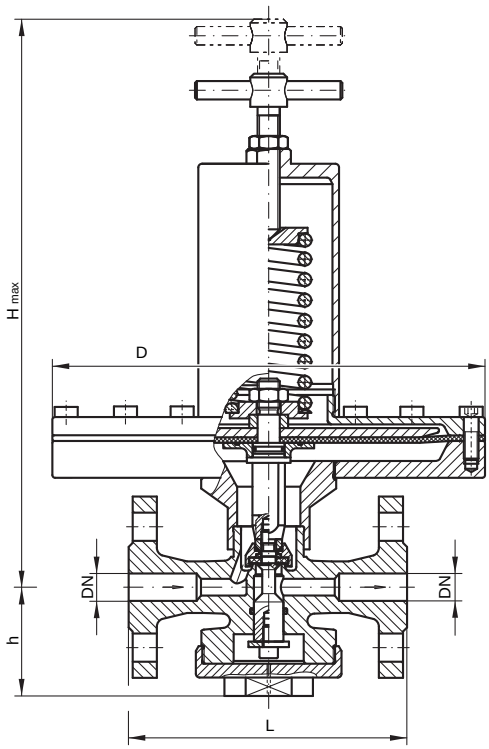


Baureihe / Series: SMK-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	⅜	270	59	115	-	-	-	-
	15	½	270	59	115	-	-	-	-

* vorzugsweise Glatt- bzw. Bundflansche am VDR.



Baureihe / Series: SMK-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	10	-	270	59	130	-	-	-	-
	15	½	270	59	130	-	-	-	-

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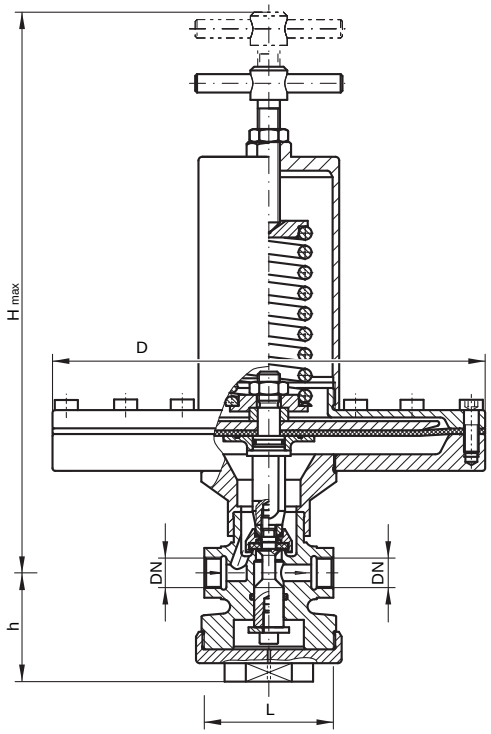
Typ 80 SMK

Anschlüsse / Connections



Baureihe / Series: SMK-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
0	8	¼	270	59	70	-	-	-	-
	10	⅜	270	59	70	-	-	-	-
	15	½	270	59	70	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

901

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

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for steam, gases and liquids

Typ 80 SMK

Optionen / Options

AC) Vordruckregler mit Einstellschraube und Schutzkappe.	**AC)** Initial pressure controller adjusting screw and protective cap.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
EA) Vordruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected initial pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert. **FB)** Vordruckregler komplett außen elektropoliert. **FC)** Durchflussgehäuse außen glasperlengestrahlt. **FD)** Vordruckregler komplett außen glasperlengestrahlt. **FE)** Vordruckregler außen komplett geschliffen und poliert mit Ra ≤ 1,2 µm.	**FA)** Body outside electropolished. **FB)** Initial pressure controller completely outside electropolished. **FC)** Body outside glass blasted. **FD)** Initial pressure controller completely outside glass blasted. **FE)** Initial pressure controller completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm. **GB)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm. **GC)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm. **GD)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm. **GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm. **GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm. **GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.

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for steam, gases and liquids

Typ 80 SMS

Lebensmittel - Pharmazie - Ausführung / Food - pharmacy - design

Standard:

- Voll-Edelstahl-Ausführung, geschmiedetes Ventilgehäuse
- Entlasteter Ventilkegel
- Dichtschließend bei 0-Verbrauch
- Membransteuerung
- dämpfbar bis 140°C
- Oberflächengüte der medienberührten Innenteile Ra ≤ 2,6 µm

Werkstoffe:

- 1.4301
- 1.4435

Optionen:

- Pneumatische Auflastung

Dichtungen:

- EPDM (dämpfbar bis 140°C)
- PTFE, EPDM (Dampf bis 150°C)
- PTFE, AF100, EPDM (Dampf bis 200°C)
- Oberflächengüten innen und außen
- Dichtungen mit FDA-Zulassung

Weitere Optionen siehe (O_80 SMS)

Standard:

- Full stainless steel design, forged valve body
- Relieved disc
- Tight with zero-consumption
- Diaphragm control
- Steam sterilisation up to 140°C
- Surface quality of the medium-contacted inner parts Ra ≤ 2,6 µm

Materials:

- 1.4301
- 1.4435

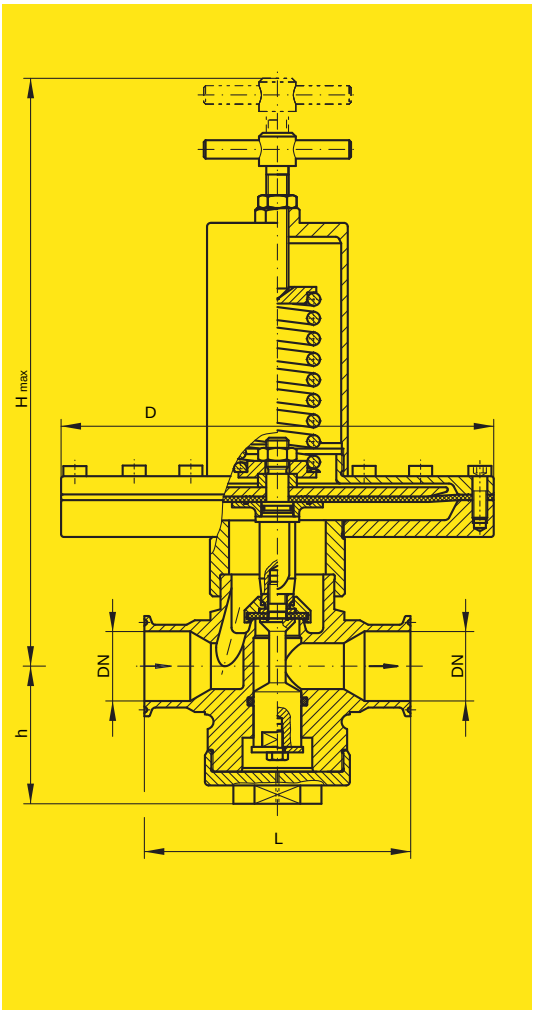
Options:

- Air loaded

Sealings:

- EPDM (steam sterilisation up to 140°C)
- PTFE, EPDM (steam up to 150°C)
- PTFE, AF100, EPDM (steam up to 200°C)
- Surface quality inside and outside
- Seals with FDA-Certificate

Further options see (O_80 SMS)



andere Anschlussformen siehe (A 80 SMS)
other connections see (A 80 SMS)

BG Size	Eintritt Inlet			Austritt Outlet		Baumaße Dimensions								K_{VS} Wert
	DN	NPS	Vordruckbereich** P_1 initial pressure range** P_1 minimal / maximal	DN	NPS	Membran- D diaphragm- D Ausführung/Design				L	H_{max}	h	H_3	
	[mm]		[bar(g)]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m³ /h]
I	15 20 25 (S)	1/2 3/4 1 (S)	0,004 / 0,94	15 20 25 (S)	1/2 3/4 1 (S)	405	310	235	190	siehe / see (A 80 SMS)			262	3,0 3,2 3,5
II	25 (G) 32 40 (S) 50 (S)	1 (G) 1¼ 1½ (S) 2 (S)	0,004 / 0,90	25 (G) 32 40 (S) 50 (S)	1 (G) 1¼ 1½ (S) 2 (S)								268	6,3 6,5 6,7 7,0
III [1)]	40 (G) 50 (G) 65 (S)	1½ (G) 2 (G) 2½ (S)	0,004 / 0,91	40 (G) 50 (G) 65 (S)	1½ (G) 2 (G) 2½ (S)								315	12,5 13,0 13,5
III B [1)]	50 (G) 65 (G) 80	2 (G) 2½ (G) 3	0,004 / 0,46	50 (G) 65 (G) 80	2 (G) 2½ (G) 3								540	27,5 28,0 28,5

** Einstellbereiche des Vordruckes siehe Rückseite (VDT-80 SMS) / spring range for initial pressure see over-leaf (VDT-80 SMS)

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Edelstahl-Vordruckregler
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für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SMS

Tabelle: Einstellbereiche des Vordruckes P_1
Table: spring ranges for initial pressure P_1

Baugröße / Size	I	II	III	III B
Eintr./Austr. Inlet/Outlet	DN 15, 20, 25	DN 25, 32, 40, 50	DN 40, 50, 65	DN 50, 65, 80
	1/2, 3/4, 1	1, 1¼, 1½, 2	1½, 2, 2½	2, 2½, 3
Membran diaphragm [mm]	Einstellbereich spring range [bar(g)]			
	0,004 - 0,0075	0,004 - 0,007	0,004 - 0,0065	0,004 - 0,007
	0,007 - 0,013	0,006 - 0,012	0,006 - 0,011	0,006 - 0,012
Ø 405	0,011 - 0,022	0,01 - 0,02	0,095 - 0,019	0,01 - 0,02
	0,019 - 0,038	0,018 - 0,035	0,017 - 0,033	0,018 - 0,036
	0,032 - 0,063	0,03 - 0,058	0,028 - 0,055	0,03 - 0,059
	0,050 - 0,099	0,046 - 0,091	0,043 - 0,086	0,046 - 0,092
	0,015 - 0,026	0,015 - 0,024	0,015 - 0,022	0,015 - 0,025
	0,023 - 0,044	0,021 - 0,041	0,019 - 0,038	0,021 - 0,042
Ø 310	0,039 - 0,077	0,036 - 0,072	0,034 - 0,068	0,037 - 0,074
	0,065 - 0,128	0,06 - 0,12	0,056 - 0,112	0,061 - 0,122
	0,1 - 0,2	0,093 - 0,185	0,088 - 0,175	0,096 - 0,191
	0,05 - 0,058	0,05 - 0,094	0,045 - 0,09	0,05 - 0,102
	0,05 - 0,1	0,083 - 0,165	0,08 - 0,16	0,091 - 0,181
Ø 235	0,088 - 0,176	0,137 - 0,273	0,132 - 0,264	0,15 - 0,3
	0,146 - 0,291	0,213 - 0,426	0,206 - 0,411	0,233 - 0,465
	0,227 - 0,454			
	0,1 - 0,21	0,1 - 0,2	0,1 - 0,2	
	0,19 - 0,37	0,18 - 0,35	0,18 - 0,35	
Ø 190	0,3 - 0,6	0,28 - 0,58	0,29 - 0,58	
	0,48 - 0,94	0,45 - 0,9	0,46 - 0,91	

größere Vordruckbereiche auf Anfrage / expanded initial pressure range on request

01'06

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Stainless Steel Initial-Pressure-Controller

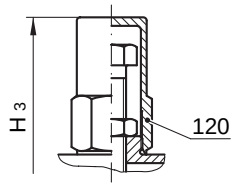
für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SMS

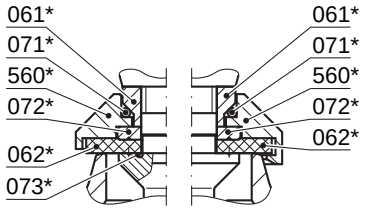
Typ 80.2 - SMS: Wst. / Material 1.4301
Typ 80.2 - SMS: Wst. / Material 1.4435

DN 15, 20, 25, 32, 40, 50, 65, 80

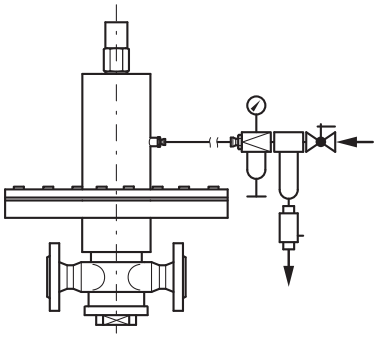
Options:



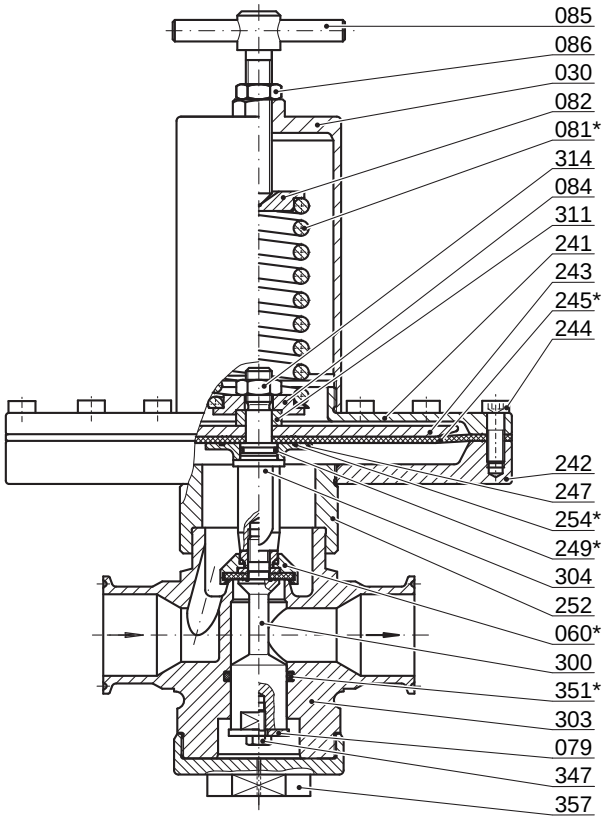
Valve with top cap
(Option AC)



disc complete, pos. 060*
Thermoplast seated Elastomer seated



selected initial pressure by air loading
design of the bonnet.
(Option EA)



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071*	1 o-ring	EPDM	EPDM	254*	1 o-ring	EPDM	EPDM
072*	1 locking ring	1.4571	1.4571	300	1 inlet pressure piston	1.4571	1.4404
073*	1 o-ring	EPDM	EPDM	304	1 piston	1.4571	1.4404
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084	1 springplate, lower	1.4305	1.4305	351*	1 o-ring	EPDM [3] [4]	EPDM [3] [4]
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086	1 lock nut	A2	A2				
120	1 cap	1.4571	1.4571				
241	1 upper housing	1.4571	1.4404				
242	1 lower housing	1.4571	1.4404				

gl 04'07

* expendable parts
size III + III B only material-design 1.4435

[1] alternative 1.4571 with 1.4571 inner parts
[2] PTFE at steam

[3] EPDM at steam up to 150°C
[4] AF100 at steam up to 200°C

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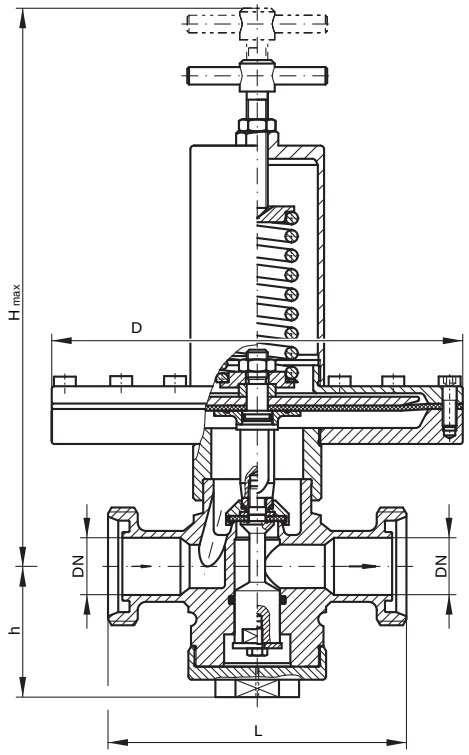
Typ 80 SMS

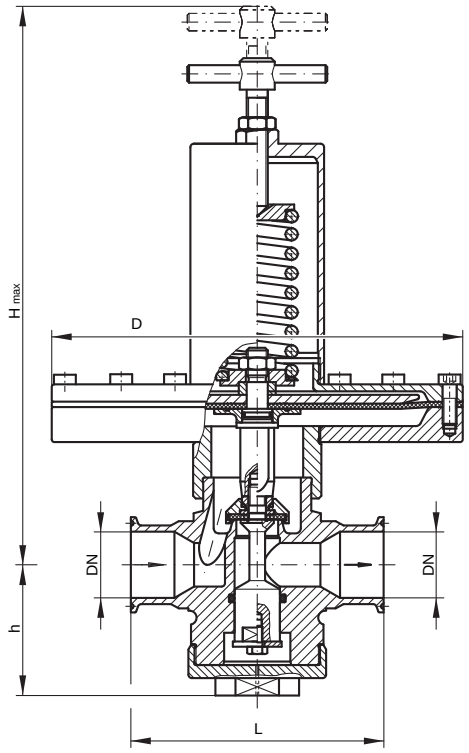
Anschlüsse / Connections



Baureihe / Series: SMS-GA / GA (AS)

Gewindestutzen / male union
z.B. DIN 11851 / 11864-1

BG Size	DN [mm]	Gewinde DIN 405	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	Rd 34x1/8	280	67	129	-	-	-	-
	20	Rd 44x1/6	280	67	135	-	-	-	-
	25 (S)	Rd 52x1/6	280	67	145	-	-	-	-
II	25 (G)	Rd 52x1/6	300	75	160	-	-	-	-
	32	Rd 58x1/6	300	75	166	-	-	-	-
	40 (S)	Rd 65x1/6	300	75	168	-	-	-	-
	50 (S)	Rd 78x1/6	300	75	170	-	-	-	-
III	40 (G)	Rd 65x1/6	340	90	208	-	-	-	-
	50 (G)	Rd 78x1/6	340	90	212	-	-	-	-
	65 (S)	Rd 95x1/6	340	90	222	-	-	-	-
III B	50 (G)	Rd 78x1/6	560	112	270	-	-	-	-
	65 (G)	Rd 95x1/6	560	112	280	-	-	-	-
	80	Rd 110x1/4	560	112	290	-	-	-	-



Baureihe / Series: SMS-CL

Klemmstutzen / clamp liner
z.B. nach DIN 32676

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	280	67	120	-	-	-	-
	20	¾	280	67	120	-	-	-	-
	25 (S)	1 (S)	280	67	130	-	-	-	-
II	25 (G)	1 (G)	300	75	145	-	-	-	-
	32	1¼	300	75	145	-	-	-	-
	40 (S)	1½ (S)	300	75	145	-	-	-	-
	50 (S)	2 (S)	300	75	145	-	-	-	-
III	40 (G)	1½ (G)	340	90	180	-	-	-	-
	50 (G)	2 (G)	340	90	180	-	-	-	-
	65 (S)	2½ (S)	340	90	180	-	-	-	-
III B	50 (G)	2 (G)	560	112	260	-	-	-	-
	65 (G)	2½ (G)	560	112	260	-	-	-	-
	80	3	560	112	260	-	-	-	-

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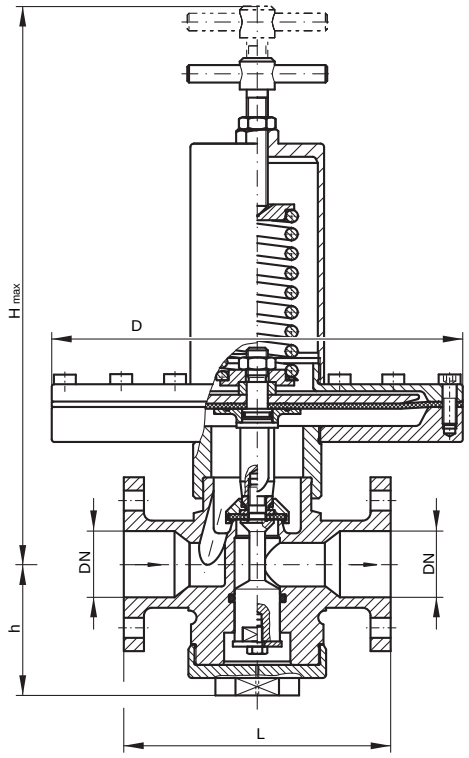
Typ 80 SMS

Anschlüsse / Connections

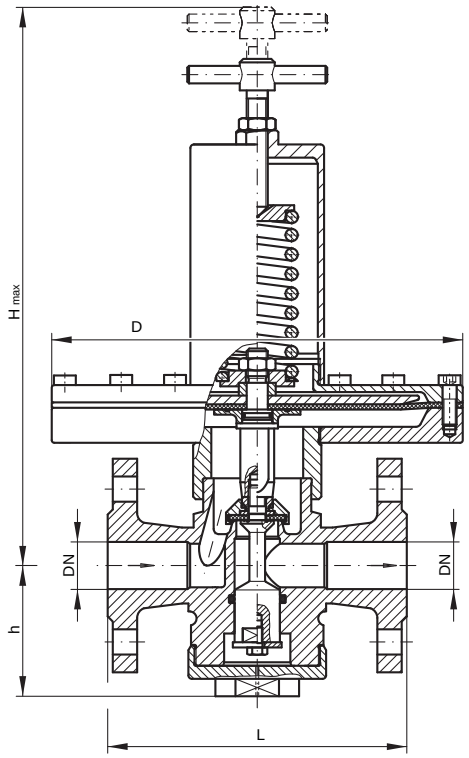


Baureihe / Series: SMS-F (...)

Kleinflansch / flange *
z. B. DIN 11864-2 **(AS)**,
APV **(APV)**, Varivent **(VV)**

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	280	67	135	-	-	-	-
	20	¾	280	67	135	-	-	-	-
	25 (S)	1 (S)	280	67	135	-	-	-	-
II	25 (G)	1 (G)	300	75	150	-	-	-	-
	32	1¼	300	75	150	-	-	-	-
	40 (S)	1½ (S)	300	75	150	-	21,0	-	-
	50 (S)	2 (S)	300	75	150	-	-	-	-
III	40 (G)	1½ (G)	340	90	190	-	-	-	-
	50 (G)	2 (G)	340	90	190	-	-	-	-
	65 (S)	2½ (S)	340	90	190	-	-	-	-
III B	50 (G)	2 (G)	560	112	260	-	-	-	-
	65 (G)	2½ (G)	560	112	260	-	-	-	-
	80	3	560	112	260	-	-	-	-

* vorzugsweise Glatt- bzw. Bundflansche am VDR.



Baureihe / Series: SMS-F

Flansch / flange
z. B. DIN 2633 (PN 16) /
ANSI B 16.5 Class 150

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	280	67	130	-	-	-	11,5
	20	¾	280	67	150	-	-	-	-
II	25	1	300	75	160	-	19,0	-	-
	32	1¼	300	75	180	-	20,0	-	-
III	40	1½	340	90	200	-	-	-	-
	50 (S)	2 (S)	340	90	230	-	25,0	20,4	-
III B	50 (G)	2 (G)	560	112	300	-	-	-	-
	65	2½	560	112	290	-	-	-	-
	80	3	560	112	310	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

'90.1

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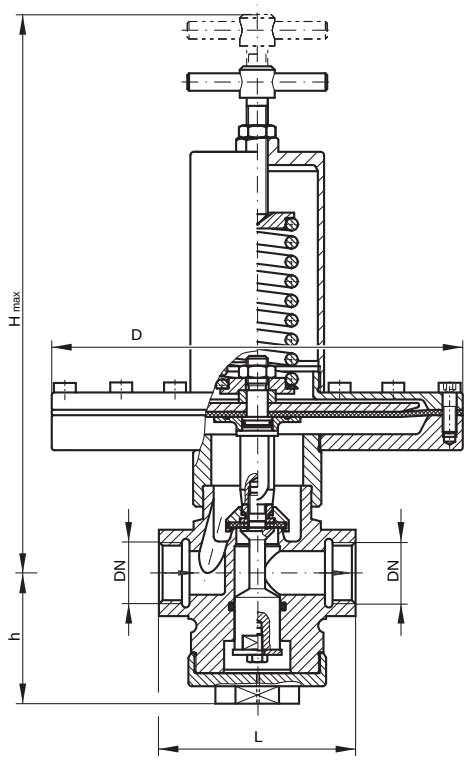
Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SMS

Anschlüsse / Connections



Baureihe / Series: SMS-IG

Gewindeanschluss / screwed connection
z.B. nach DIN ISO 228

BG Size	DN [mm]	Zoll	H max [mm]	h [mm]	L [mm]	Gewicht / Weight [kg] für / for D Ø 405	Ø 310	Ø 235	Ø 190
I	15	½	280	67	90	-	-	-	-
	20	¾	280	67	90	-	-	-	-
	25 (S)	1 (S)	280	67	135	-	-	-	-
II	25 (G)	1 (G)	300	75	105	-	-	-	-
	32	1¼	300	75	105	-	-	-	-
	40 (S)	1½ (S)	300	75	155	-	-	13,0	-
	50 (S)	2 (S)	300	75	185	-	-	-	-
III	40 (G)	1½ (G)	340	90	145	-	-	-	-
	50 (G)	2 (G)	340	90	145	-	-	-	-
	65 (S)	2½ (S)	340	90	210	-	-	-	-
III B	50 (G)	2 (G)	560	112	220	-	-	-	-
	65 (G)	2½ (G)	560	112	220	-	-	-	-

Die dargestellten Anschlussformen sind Beispiele. / Below described connections are examples.
Andere Anschlüsse oder Beistellungen auf Anfrage. / Other connections or provided connections on request.

901

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Edelstahl-Vordruckregler
Stainless Steel Initial-Pressure-Controller

für Dämpfe, Gase und Flüssigkeiten
for steam, gases and liquids

Typ 80 SMS

Optionen / Options

AC) Vordruckregler mit Einstellschraube und Schutzkappe.	**AC)** Initial pressure controller adjusting screw and protective cap.
CA) FDA - Zulassung für die Dichtungen.	**CA)** FDA - Certificate for the seals.
EA) Vordruck-Sollwert durch pneumatische Auflastung der Federhaube einstellbar (Ferneinstellung); Zubehör: Absperrbahre Automatik-Feinfilter- und Präzisions-Reduzierstation Baureihe AFR-418.	**EA)** Adjustable selected initial pressure by air loaded design of the bonnet (remote control); Accessories: Shut off automatic fine filter and precision reducing valve series AFR-418.
FA) Durchflussgehäuse außen elektropoliert. **FB)** Vordruckregler komplett außen elektropoliert. **FC)** Durchflussgehäuse außen glasperlengestrahlt. **FD)** Vordruckregler komplett außen glasperlengestrahlt. **FE)** Vordruckregler außen komplett geschliffen und poliert mit Ra ≤1,2 µm.	**FA)** Body outside electropolished. **FB)** Initial pressure controller completely outside electropolished. **FC)** Body outside glass blasted. **FD)** Initial pressure controller completely outside glass blasted. **FE)** Initial pressure controller completely outside ground and polished with Ra ≤ 1,2 µm.
GA) Durchflussgehäuse innen glasperlengestrahlt mit Oberflächengüte Ra ≤ 2,0 µm. **GB)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 1,6 µm. **GC)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,8 µm. **GD)** Medienberührte Oberflächen mit Oberflächengüte Ra ≤ 0,5 µm.	**GA)** Body inside glass blasted with Ra ≤ 2,0 µm. **GB)** Medium contacted surfaces with roughness Ra ≤ 1,6 µm. **GC)** Medium contacted surfaces with roughness Ra ≤ 0,8 µm. **GD)** Medium contacted surfaces with roughness Ra ≤ 0,5 µm.

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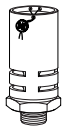
Belüftungsventile / Unter- und Überdruckventile

Vacuum Relief Valves / Vacuum- and Pressure Relief Valves



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Ventil Valve	Verwendung Use	Medium	*	DN_E	p_u bar	$p_ü$ bar
Typ 9	Belüftungsventil Vacuum- Relief- Valve für Behälter und Rohrleitungen, flammensichere Ausführung, mit Gewindeanschluss oder Flansch for container and rigid coaxial cable, flameproof design, with screwed inlet or flange	D/G	P	1 - 2	- 0,02	-
Typ 90	Unter- und Überdruckventil Vacuum- and Pressure- Relief- Valve für Behälter und Rohrleitungen mit Gewindeanschluss, Rundgewinde oder Flansch for container and rigid coaxial cable, with screwed inlet round thread or flange	D/G	-	1/2 - 2	- 0,9 / - 0,03	0,3 - 3
Typ 91	Belüftungsventil, federbelastet Vacuum- Relief- Valve, springloaded für Behälter mit einem Flüssigkeitsauslauf mit Gewindeanschluss for container with liquid outlet with screwed inlet	D/G	-	1/2 - 2	- 0,95 / - 0,05	-

Medium

- Dämpfe / steam..... - D -
- Gase / gases..... - G -
- Flüssigkeiten / liquids..... - F -

Unterdruck / under pressure..... - p_U -
Minderdruck / over pressure..... - $p_Ü$ -

Bauteilgeprüft / TÜV-Approval..... - B -
PTB-zugelassen / PTB-Approval - P -

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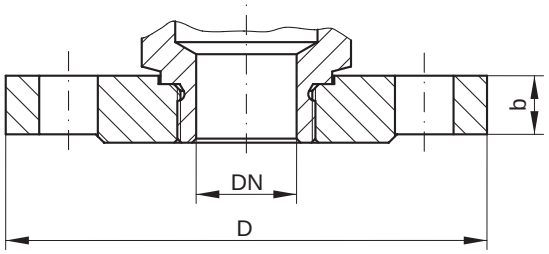
Belüftungsventil
Vacuum-Relief-Valve

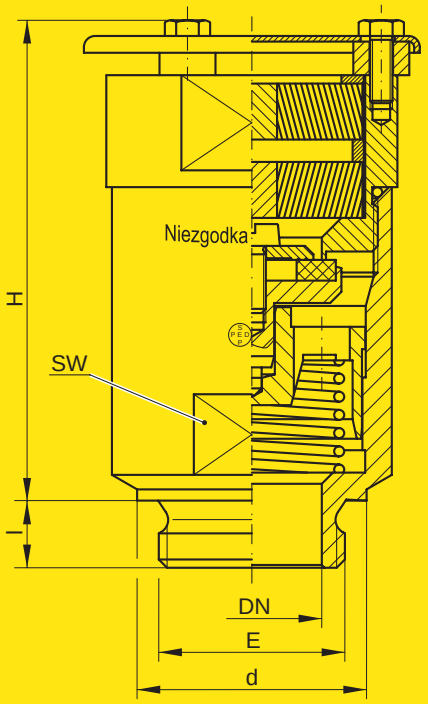
für Dämpfe u. Gase, geeignet für Behälter u. Rohrleitungen, flammensichere Ausführung
for steam and gases, for container and rigid coaxial cable, flameproof design

Typ 9

Typ 9.2 : Wst. / Material 1.4571 / 1.4571



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Zulassung / Approval

DN 25 PTB Nr. III B/S-1562
DN 40 PTB Nr. III B/S-1563

Verwendung / Use

für Dämpfe u. Gase, geeignet für Behälter u. Rohrleitungen
for steam and gases, for container and rigid coaxial cable
DN 80 Zeile / line 1
DN 100 Zeile / line 2

Einbaulage: senkrecht
Installation position: vertical

BG Size	Anschlussmaße / Dimensions						Baumaße Dimensions		Ansprechdruck Set pressure	Gewicht Weight
	E	DN	d	l	D	b	H	SW	p	
	G	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[kg]
I	1	25	46	12	115	16	85	46	- 0,02 - 0,03 - 0,04 - 0,1 - 0,2 - 0,3 - 0,5	0,7
II	1½	40	64	14	150	16	98	70	- 0,04 - 0,1 - 0,2 - 0,5 - 0,8	1,7
	2	46	68	14	165	18	98	70		1,8

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Belüftungsventil
Vacuum-Relief-Valve

für Dämpfe u. Gase, geeignet für Behälter u. Rohrleitungen, flammensichere Ausführung
for steam and gases, for container and rigid coaxial cable, flameproof design

Typ 9

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Baugröße / Size	I					II				
Anschl. / Dimension	G 1					G 1½, G 2				
Ansprechdruck Set pressure	- 0,03	- 0,1	- 0,2	- 0,3	- 0,5	- 0,04	- 0,1	- 0,2	- 0,5	- 0,8
Unterdruck Under pressure	p_e [bar(g)]									
p_e [bar(g)]										
- 0,10		0								
- 0,15		57								
- 0,20		68	0							
- 0,25		76	47							
- 0,30		84	76	0						
- 0,35		89	96	70						
- 0,40		92	102	95						
- 0,45		97	108	104						
- 0,50		101	111	110	0					
- 0,55		104	115	110	11					
- 0,60		106	117	112	41					
- 0,65		109	118	112	41					
- 0,70		110	120	119	40					
- 0,75		113	121	121	43					
- 0,80		113	121	121	43					
- 0,85		113	121	121	43					
- 0,90		113	121	121	43					

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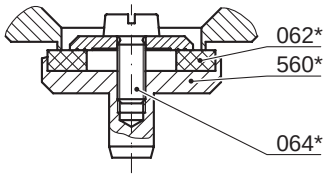
Belüftungsventil
Vacuum-Relief-Valve

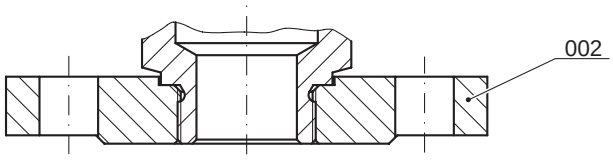
für Dämpfe u. Gase, geeignet für Behälter u. Rohrleitungen, flammensichere Ausführung
for steam and gases, for container and rigid coaxial cable, flameproof design

Typ 9

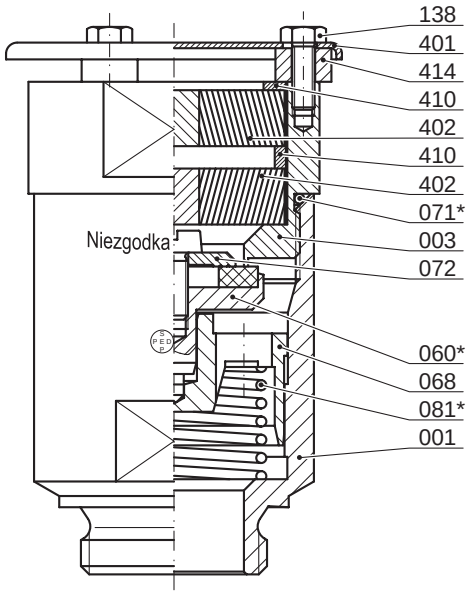
Typ 9.2 : Wst. / Material 1.4571 / 1.4571



Kegel komplett, Pos. 060*
disc complete, pos. 060*



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Pos.	Bezeichnung	Werkstoff	Item	Description	Material
001	1 Eintrittskörper	1.4571	001	1 inlet body	1.4571
002	1 Eintrittsflansch	1.4571	002	1 inlet flange	1.4571
003	1 Sitz	1.4571	003	1 seat	1.4571
060*	1 Kegel komplett		060*	1 disc, complete	
560*	1 Kegel, Rohling	1.4571	560*	1 disc	1.4571
062*	1 Kegeldichtung	FPM / PTFE	062*	1 soft sealing	FPM / PTFE
064*	1 Kegelschraube	A2	064*	1 disc screw	A2
068	1 Kegelführung	1.4571	068	1 disc guidance	1.4571
071*	1 O-Ring	FPM	071*	1 o-ring	FPM
072	1 Klemmscheibe	1.4571	072	1 locking ring	1.4571
081*	1 Feder	1.4571	081*	1 spring	1.4571
138	3 Schraube	A2	138	3 screw	A2
401	1 Abdeckplatte	1.4301	401	1 plate	1.4301
402	2 Flammenschutzfilter	1.4301	402	2 flameproof filter	1.4301
410	2 Distanzring	1.4301	410	2 distance ring	1.4301
414	3 Schraubenhülse	1.4305	414	3 screwed bushing	1.4305

* Ersatz- bzw. Verschleißteile / expendable parts

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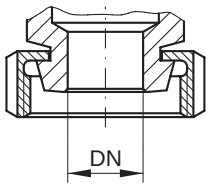
Unter- und Überdruckventil
Vacuum and Pressure-Relief-Valve

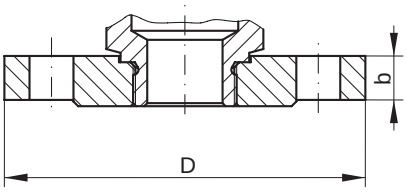
für ungiftige Dämpfe und Gase, geeignet für Behälter und Rohrleitungen
for non-toxic steam and gases, for container and rigid coaxial cable

Typ 90

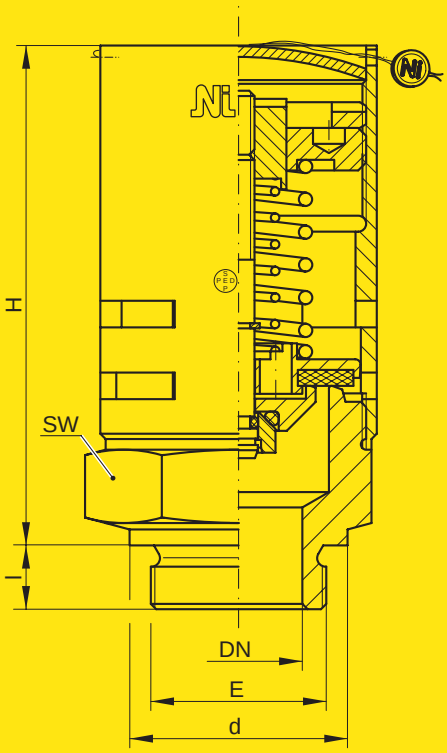
Typ 90.2 : Wst. / Material 1.4571 / 1.4301
Typ 90.3 : Wst. / Material 2.0401 / 2.0401



mit Kegelstutzen und Nutüberwurfmutter
nach DIN 11851
with cone connection and nut
acc. to DIN 11851



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Verwendung / Use

Betriebstemperatur / operating temperature

Typ 90.2: -60°C bis / to 150°C
Typ 90.3: -10°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Anschlussmaße / Dimensions ISO 228						Baumaße Dimensions		Unterdruck underpressure		Überdruck overpressure		Gewicht Weight
	E	DN	d	l	D	b	H	SW	$p_{U\,min}$	$p_{U\,max}$	$p_{Ü\,min}$	$p_{Ü\,max}$	
	G	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[bar(g)]	[bar(g)]	[kg]
I	1/2	13	26	12	95	14	88	41	- 0,9	- 0,1	0,3	3,0	0,32
	3/4	18	32	12	105	16	88	41	- 0,9	- 0,1	0,3	3,0	0,32
II	1	25	39	12	115	16	94	50	- 0,9	- 0,05	0,2	3,0	0,41
	1¼	32	49	14	140	16	94	50	- 0,9	- 0,05	0,2	3,0	0,41
III	1½	38	55	16	150	16	106	70	- 0,9	- 0,03	0,1	3,0	0,72
	2	48	68	20	165	18	106	70	- 0,9	- 0,03	0,1	3,0	0,73

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Unter- und Überdruckventil
Vacuum and Pressure-Relief-Valve

für ungiftige Dämpfe und Gase, geeignet für Behälter und Rohrleitungen
for non-toxic steam and gases, for container and rigid coaxial cable

Typ 90

Überdruckfunktion / Overpressure function

Medium / fluid	Luft / air (0°C) [m^3_n/h]					
Baugröße / size	I		II		III	
Eintritt / inlet p_e [bar(g)]	G 1/2	G 3/4	G 1	G 1¼	G 1½	G 2
0,1	26	26	50	50	150	150
0,2	38	38	74	74	171	171
0,3	49	49	94	94	218	218
0,4	58	58	113	113	260	260
0,5	65	65	126	126	290	290
1,0	101	101	195	195	451	451
1,5	131	131	252	252	583	583
2,0	162	162	312	312	722	722
2,5	195	195	376	376	868	868
3,0	222	222	429	429	922	922

Vorläufige Werte / temporary values

Unterdruckfunktion / Underpressure function

Medium / fluid	Luft / air (0°C) [m^3_n/h]					
Baugröße / size	I		II		III	
Eintritt / inlet p_e [bar(g)]	G 1/2	G 3/4	G 1	G 1¼	G 1½	G 2
- 0,05	7	7	18	18	37	37
- 0,1	10	10	24	24	51	51
- 0,2	13	13	33	33	70	70
- 0,3	15	15	39	39	81	81
- 0,4	17	17	43	43	90	90
- 0,5	18	18	44	44	93	93
- 0,6	18	18	45	45	96	96
- 0,7	18	18	46	46	98	98
(- 0,8)						
(- 0,9)						

Vorläufige Werte / temporary values

06

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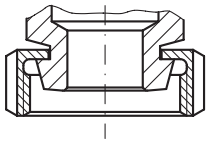
Unter- und Überdruckventil
Vacuum and Pressure-Relief-Valve

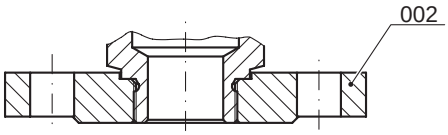
für ungiftige Dämpfe und Gase, geeignet für Behälter und Rohrleitungen
for non-toxic steam and gases, for container and rigid coaxial cable

Typ 90

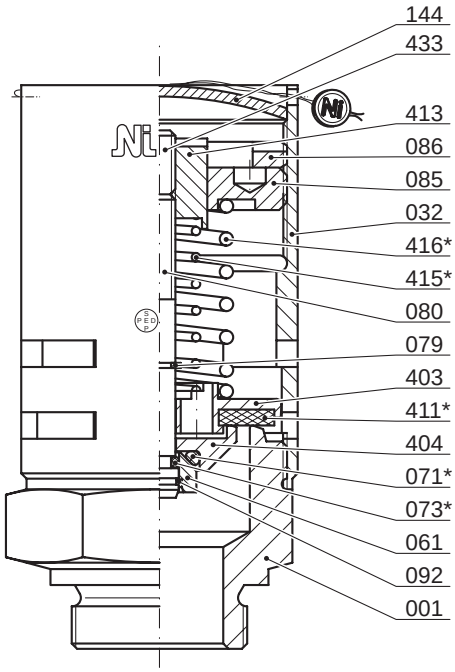
Typ 90.2 : Wst. / Material 1.4571 / 1.4301
Typ 90.3 : Wst. / Material 2.0401 / 2.0401



mit Kegelstutzen und Nutüberwurfmutter
nach DIN 11851
with cone connection and nut
acc. to DIN 11851



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Pos.	Bezeichnung	Werkstoff		Item	Description	Material	
		90.2	90.3			90.2	90.3
001	1 Eintrittskörper	1.4571	2.0401	001	1 inlet body	1.4571	2.0401
002	1 Eintrittsflansch	1.4571		002	1 inlet flange	1.4571	
032	1 Haubenrohr	1.4301	2.0401	032	1 bonnet pipe	1.4301	2.0401
061	1 Druckstück	1.4571	1.4571	061	1 pressure piece	1.4571	1.4571
071*	1 O-Ring	FPM	FPM	071*	1 o-ring	FPM	FPM
073*	1 O-Ring	FPM	FPM	073*	1 o-ring	FPM	FPM
079	1 Hubbegrenzung	A2	A2	079	1 lift stopper	A2	A2
080	1 Spindel	1.4305	1.4305	080	1 spindel	1.4305	1.4305
085	1 Druckschraube	1.4305	2.0401	085	1 adjusting screw	1.4305	2.0401
086	1 Gegenmutter	1.4305	2.0401	086	1 lock nut	1.4305	2.0401
092	1 Sprengring	1.4571	1.4571	092	1 lock ring	1.4571	1.4571
144	1 Verschlussscheibe	A2	A2	144	1 lock washer	A2	A2
403	1 Überdruckkegel	1.4571	2.0401	403	1 overpressure disc	1.4571	2.0401
404	1 Unterdruckkegel	1.4571	2.0401	404	1 underpressure disc	1.4571	2.0401
411*	1 Kegeldichtung	FPM	FPM	411*	1 soft sealing	FPM	FPM
413	1 Führungsteller	1.4571	2.0401	413	1 guide plate	1.4571	2.0401
415*	1 Unterdruckfeder	1.4310	1.4310	415*	1 underpressure spring	1.4310	1.4310
416*	1 Überdruckfeder	1.4310	1.4310	416*	1 overpressure spring	1.4310	1.4310
433	1 Gewindestift	A2	A2	433	1 set screw	A2	A2

* Ersatz- bzw. Verschleißteile / expendable parts

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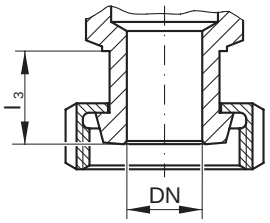
Belüftungsventil, federbelastet
Vacuum-Relief-Valve, springloaded

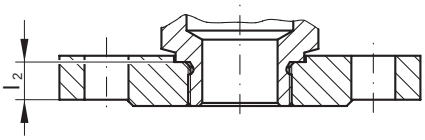
für ungiftige Dämpfe und Gase, geeignet für Behälter mit einem Flüssigkeitsauslauf
for non-toxic steam and gases, for container with a liquid outlet

Typ 91

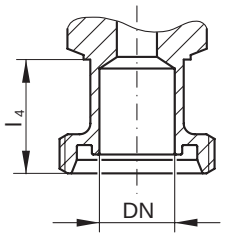
Typ 91.2 : Wst. / Material 1.4571 / 1.4301
Typ 91.3 : Wst. / Material 2.0401 / 2.0401



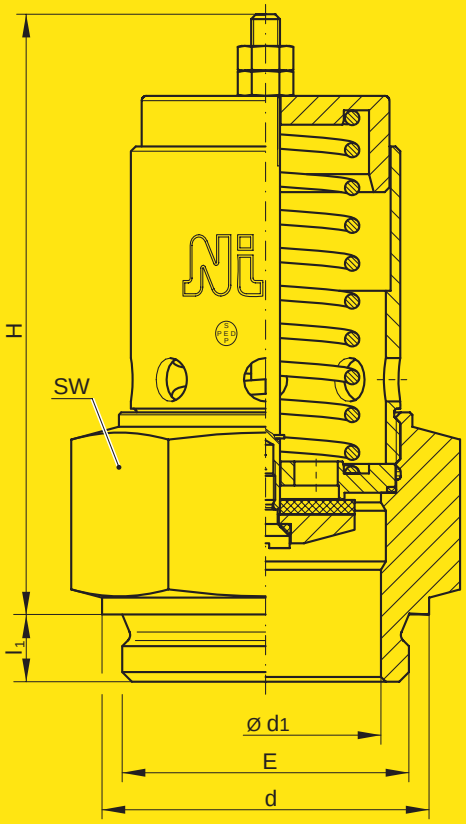
mit Kegelstutzen und Nutüberwurfmutter
nach DIN 11851
with cone connection and nut
acc. to DIN 11851



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Gewindestutzen nach DIN 11851
with thread connectionacc. to DIN 11851



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Verwendung / Use

Betriebstemperatur / operating temperature

Typ 91.2: -60°C bis / to 150°C
Typ 91.3: -10°C bis / to 130°C

Kegel weich dichtend / disc soft seated

siehe techn. Anhang: KWD-1 / see techn. appendix: KWD-1

Einbaulage: senkrecht
Installation position: vertical

BG Size	Anschlussmaße / Dimensions									Baumaße Dimensions		Unterdruck Underpressure		Gewicht Weight
	ISO 228				DIN EN 1092-1 PN 16		DIN 11851							
	ø d1	E	d	l 1	DN	l 2	DN	l 3	l 4	H	SW	p min	p max	
	[mm]	G	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[bar(g)]	[bar(g)]	[kg]
I	12	1/2	26	12	15	12	15	26	32	92	32	-0,95	-0,05	0,32
	18	3/4	32	12	20	13,5	20	28	34	92	32	-0,95	-0,05	0,35
II	23	1	39	12	25	13,5	25	30	34	92	46	-0,95	-0,05	0,50
	25	1¼	46	14	32	14	32	30	34	92	46	-0,95	-0,05	0,52
III	38	1½	55	14	40	14	40	30	34	125	60	-0,95	-0,05	1,20
	48	2	68	14	50	15	50	31	34	125	70	-0,95	-0,05	1,25

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Belüftungsventil, federbelastet
Vacuum-Relief-Valve, springloaded

für ungiftige Dämpfe und Gase, geeignet für Behälter mit einem Flüssigkeitsauslauf
for non-toxic steam and gases, for container with a liquid outlet

Typ 91

Volumenstromtabelle / Discharge capacities

Luft bei 0°C [m^3_n/h] / air at 32°F [m^3_n/h]

Medium / fluid	Luft / air (0°C) [m^3_n/h]					
Baugröße / size	I		II		III	
ø d_1 [mm]	12	18	23	25	38	48
Eintritt / inlet p_e [bar(g)]	G 1/2 DN 15	G 3/4 DN 20	G 1 DN 25	G 1¼ DN 32	G 1½ DN 40	G 2 DN 50
- 0,05	11	11	19	19	55	55
- 0,1	23	23	33	33	89	89
- 0,2	32	32	45	45	126	126
- 0,3	40	40	54	54	154	154
- 0,4	44	44	66	66	177	177
- 0,5	47	47	72	72	191	191
- 0,6	50	50	80	80	203	203
- 0,7					212	212
- 0,8					212	212
- 0,9						

Vorläufige Werte / temporary values

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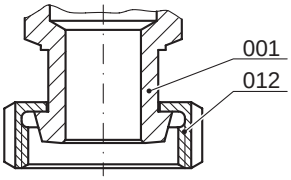
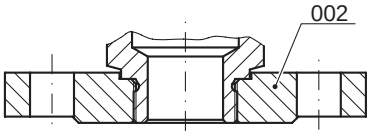
für ungiftige Dämpfe und Gase, geeignet für Behälter mit einem Flüssigkeitsauslauf
for non-toxic steam and gases, for container with a liquid outlet

Typ 91

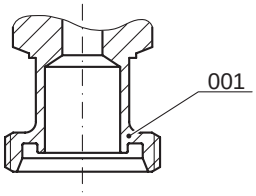
Typ 91.2 : Wst. / Material 1.4571 / 1.4301
Typ 91.3 : Wst. / Material 2.0401 / 2.0401



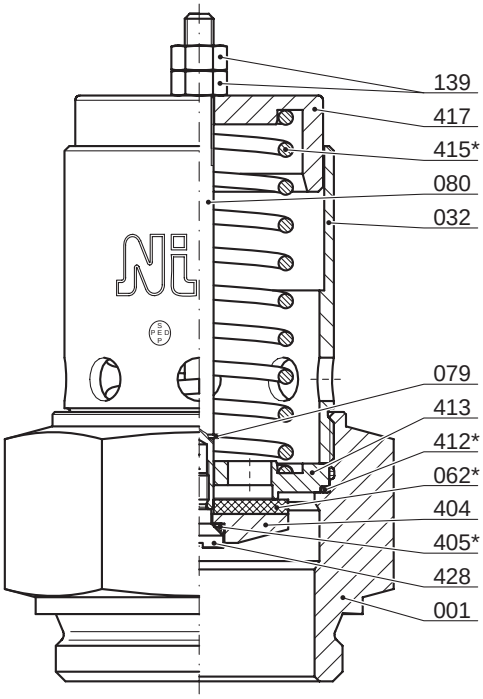
mit Kegelstutzen und Nutüberwurfmutter
nach DIN 11851
with cone connection and nut
acc. to DIN 11851



mit Flanschanschluss nach z.B. DIN / ANSI
with Flange connection acc. to DIN / ANSI



mit Gewindestutzen nach DIN 11851
with thread connectionacc. to DIN 11851



mit Rohrgewinde nach ISO 228
with pipethread acc. to ISO 228

Pos.	Bezeichnung	Werkstoff 91.2	Werkstoff 91.3	Item	Description	Material 91.2	Material 91.3
001	1 Eintrittskörper	1.4571	2.0401	001	1 inlet body	1.4571	2.0401
032	1 Haubenrohr	1.4301	2.0401	032	1 bonnet pipe	1.4305	2.0401
062*	1 Kegeldichtung	siehe techn. Anhang: KWD-1		062*	1 soft sealing	see techn. appendix: KWD-1	
079	1 Hubbegrenzung	A2	A2	079	1 lift stopper	A2	A2
080	1 Spindel	1.4305	1.4305	080	1 spindel	1.4305	1.4305
139	2 Mutter	A2	A2	139	2 nut	A2	A2
404	1 Unterdruckkegel	1.4305 [1)]	2.0401	404	1 underpressure disc	1.4305 [1)]	2.0401
405*	1 O-Ring	FPM	FPM	405*	1 o-ring	FPM	FPM
412*	1 O-Ring	FPM	FPM	412*	1 o-ring	FPM	FPM
413	1 Führungsteller	1.4305 [1)]	2.0401	413	1 guide plate	1.4305 [1)]	2.0401
415*	1 Unterdruckfeder	1.4310	1.4310	415	1 underpressure spring	1.4310	1.4310
417	1 Federteller	1.4305	2.0401	417	1 spring carrier	1.4305	2.0401
428	1 Spindelschraube	1.4305 [1)]	1.4305 [1)]	428	1 spindle screw	1.4305 [1)]	1.4305 [1)]
	DIN / ANSI				DIN / ANSI		
002	1 Eintrittsflansch	1.4571		002	1 inlet flange	1.4571	
	DIN 11851				DIN 11851		
001	1 Eintrittskörper	1.4571		001	1 inlet body	1.4571	
012	1 Nutüberwurfmutter	1.4404		012	1 union nut	1.4404	

* Ersatz- bzw. Verschleißteile / expendable parts

[1)] alternativ: 1.4571 / alternative: 1.4571

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Technischer Anhang
Technical Appendix

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Tabelle der Weichdichtungen
Table of soft sealings

KWD-1

Ni - short-sign	ISO - short-sign	ASTM - short-sign	Material - type	Temperatur range *	Range of pressure boundary		Range of application
					Relief - valve- / Safety - valve flat	o-ring	Pressure reducing valves Δ P (P_1 / P_2)	
Elastomeres								
EPDM *	**EPDM**	EPDM	Ethylen-Propylen-Dien Kautschuk APTK®	- 40°C to + 120°C (only for steam)	≤ 16 bar	< 120 bar	≤ 25 bar	Good resistance against a lot of chemicals, hot water, steam, alkaline solution, acids, alcohol. Average mechanical characteristics. Ozone resistant, not oil resistant.
FPM *	**FPM**	FKM	Fluor-Kautschuk Viton®	- 20°C to + 200°C	≤ 25/35 bar	< 200 bar	≤ 40 bar	Good resistance against a lot of chemicals, mineral oil, hot air, acid. Average to good mechanical characteristics.
FFKM	-	FFKM	Perfluor-Kautschuk Kalrez®	- 30°C to + 260°C	≤ 25 bar	< 120 bar	≤ 40 bar	Very good resistance against a lot of chemicals, oxygen, ozone, mineral oil. Good thermal and mechanical characteristics.
PUR *	**AU**	AU	Polyurethan Vulkollan®	- 30°C to + 80°C	≤ 35 bar	-	-	Good resistance against a lot of chemicals, hydraulic oil, alcohol, fuel. Very good mechanical characteristics.
Silicon	**MVQ**	MVQ	Silicon	- 60°C to + 200°C	≤ 6 bar	< 10 bar	≤ 25 bar	Good resistance against hot gas and air. Average mechanical characteristics.
SP1	-	-	Vespel®	- 270°C to + 250°C	≤ 400 bar	-	≤ 100 bar	Very good resistance against CO_2. Very good thermal and mechanical characteristics.
AF 100	**TFE/P**	TFE/P	Aflas®	- 20°C to + 200°C	-	< 63 bar	≤ 25 bar	Good resistance against hot water and steam. .
Thermoplasts								
PA 6 *	**PA**	PA	Polyamid Nylon®	- 40°C to + 80°C	≤ 300 bar	-	≤ 100 bar	Good resistance against a lot of chemicals, fuel, cooling liquid, silicone oil. Good mechanical characteristics.
PTFE * PTFE/GL *	**PTFE**	PTFE	Polytetrafluorethylen Teflon®	- 200°C to + 260°C	≤ 16/25 bar	-	≤ 50 bar	Good resistance against chemicals, acid, alkaline solution, solvent, oil. Good thermal and average mechanical characteristics.
PVDF	-	-	Polyvinylidenfluorid	- 40°C to + 150°C	≤ 45 bar	-	≤ 100 bar	Very good resistance against chemicals, gasiform oxygen. Very good mechanical characteristics.
RCH 1000	**PE**	PE	Polyethylen (PE)	- 270°C to + 80°C	≤ 45 bar	-	≤ 50 bar	Good resistance against a lot of chemicals, cryogenic media. Good mechanical characteristics.

* Standard soft sealing

** At raised set pressure maximum operating temperatur is reduced.
other materials on request

01'06

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Lagerung von Elastomer-Erzeugnissen
Storage of elastomeric products

Storage of elastomeric products

The appropriate storage of elastomeric products directlyinfluences the working life of the respective sealing materials. Environmental influences (oxygen, ozone, heat, moisture, solvents etc.) considerably impair the quality of the elastomers during their storage. Consequently, it is essential that the storage is effected properly. Directives for the storage of rubber products are standardized in accordance with DIN 7716 and ISO 2230.

The storage room should be cool, dry and dustfree.

In order to achieve a maximum working life we recommend to adhere to the following instructions for storage:

Attention! Depending on the mode of application and on the the dimensions concerned, all sealings / gaskets have to be stored so that they will not be deformed. O-rings **must not** be stretched, folded, bent or placed on hooks. On principle, the stock of elastomers should be kept 'moving' according to incoming and outgoing goods (first in, first out). The condition of sealings/gaskets which have been stored for a long time, can be checke d by exposing them to a slight tensile stress; capillary cracks at the surface will entail a distortion of the sealings or gaskets.

Heat	• The storage temperature should range between 283K (+10°C) and 293K (20°C). Any deviation from these limit values will reduce the service life. Storage near radiators/sources of heat is not allowed.
Moisture	• Moisture and condensation water must be avoided. The relative humidity should range between 65 and 75%.
Oxygen/ Ozone	• It is recommended to retain the original packing or to store the material under exclusion of air (no exchange). Do not use any ozone-generating appliances inside the storage room
Light	• Do not expose to direct sun radiation, prefer a darkened room.
Contact	• During storage it must be ensured that direct contact with solvents, fuels, lubricants, chemicals, acids etc. will be avoided.

The cleaning of elastomers is easily done using water to which a bit of soap is added.

The following storage lifes should not be exceeded:

VITON®	10 year,	KALREZ®	4 year
Silikon	10 year,	EPDM	6 year
Neoprene	4 year,	Vulkollan PUR	4 year.

01'06

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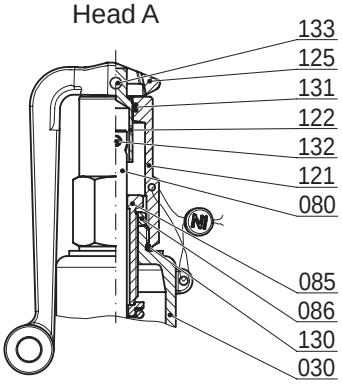
Mounting and dismonting of the valvehead head A - D

Table 169

Head A

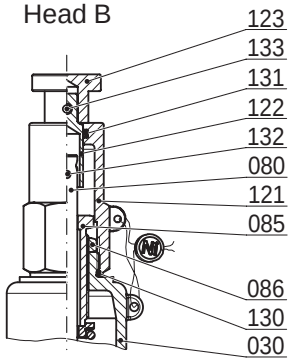


Valvehead A (gastight with easing lever)

groove pin	(133)	knock out
lifting lever	(125)	remove
lifting cap	(121)	unscrew
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Assembly and fixing of adjusting screw in reversed sequence.
No.130, 131 are to replace if possible.

Head B

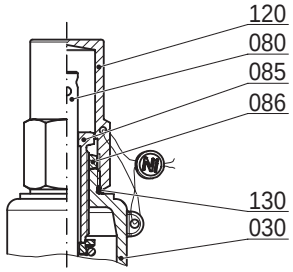


Valvehead B (gastight with lifting button)

groove pin	(133)	knock out
lifting button	(123)	remove
lifting cap	(121)	unscrew
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Assembly and fixing of adjusting screw in reversed sequence.
No.130, 131 are to replace if possible.

Head C

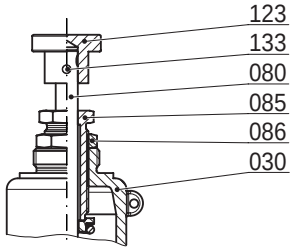


Valvehead C (gastight with cap)

cap	(120)	unscrew
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Assembly and fixing of adjusting screw in reversed sequence.
No.130 are to replace if possible.

Head D



Valvehead D (with lifting button, only relief-valve)

lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Assembly and fixing of adjusting screw in reversed sequence.

09.06

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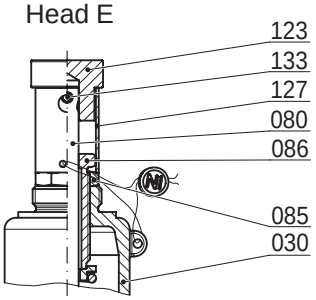
Mounting and dismonting of the valvehead
head E, F, G, M

Table 169

Head E

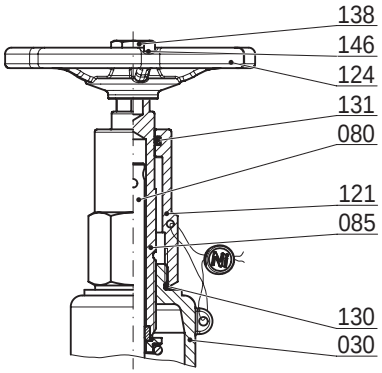


Valvehead E (with supported lifting button)

groove pin	(133)	knock out
lifting button	(123)	remove
support tube	(127)	remove
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Assembly and fixing of adjusting screw in reversed sequence.

Head F



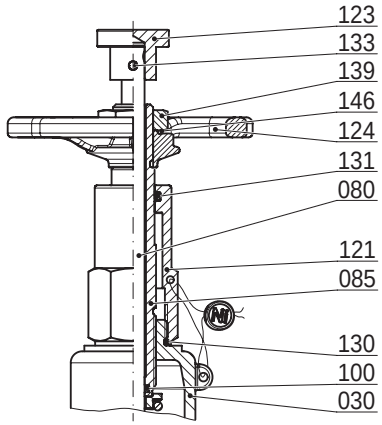
Valvehead F (gastight with handwheel, only relief-valve)

6kt-screw	(138)	unscrew
handwheel	(124)	remove
lifting cap	(121)	unscrew
adjusting screw	(085)	necessary set pressure adjust

Before adjusting set pressure, working pressure has to be lower than a half.

Assembly and fixing of adjusting screw in reversed sequence.
No.130, 131 are to replace if possible.

Head G



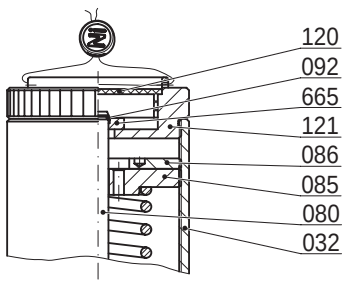
Valvehead G (gastight with handwheel and lifting button, only relief-valve)

groove pin	(133)	knock out
lifting button	(123)	remove
6kt-nut	(139)	unscrew
handwheel	(124)	remove
lifting cap	(121)	unscrew
adjusting screw	(085)	necessary set pressure adjust

Before adjusting set pressure, working pressure has to be lower than a half.

Assembly and fixing of adjusting screw in reversed sequence.
No.100, 130, 131 are to replace if possible.

Head M



Valvehead M (with cap)

cap	(120)	unscrew
lock ring	(092)	remove
lifting cap	(121)	unscrew
lock nut	(086)	loose *
adjusting screw	(085)	necessary set pressure adjust *

Assembly and fixing of adjusting screw in reversed sequence.
* Use special tool.

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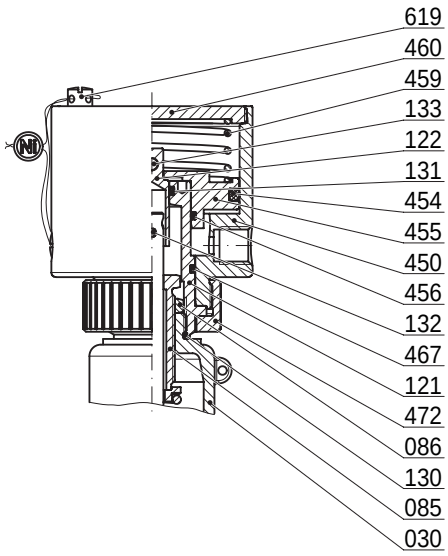
Mounting and dismonting of the valvehead head H, T

Table 169

Head H



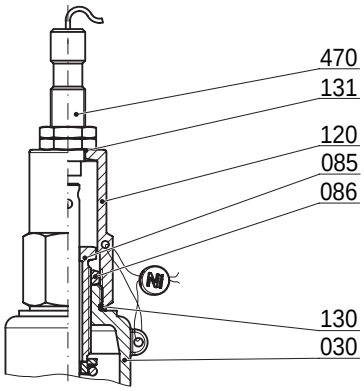
Valvehead H (pneumatic lifting head)

cover	(460)	unscrew
spring	(459)	remove
groove pin	(133)	knock out
lifting plate	(455)	remove
union nut	(472)	loose
control head	(450)	internal components extract
lifting cap	(121)	unscrew
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Before adjusting set pressure, working pressure has to be lower than a half.

Assembly and fixing of adjusting screw in reversed sequence. No.130, 131, 454, 456, 467 are to replace if possible.

Head T



Valvehead T (sensor)

sensor	(470)	unscrew
cap	(120)	unscrew
lock nut	(086)	loose
adjusting screw	(085)	necessary set pressure adjust

Before adjusting set pressure, working pressure has to be lower than a half.

Assembly and fixing of adjusting screw in reversed sequence. No.130,131 are to replace if possible.

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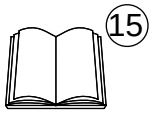
Hinweis zur Lagerung und Inbetriebnahme
Instructions for the storage and putting into operation



Instructions for the storage and putting into operation of Safety- / Relief-Valves

After transport and an extended storage time of the valves with a preset pressure, is retarded opening of the seat and the cone of the valve normally. This effect is called "tacking effect". This applies to sealing surfaces (metal / elastomeres) and also to lapped sealing surfaces (metal / metal).

After installation of the valve, the sealing surfaces will be separated from each other through a higher pressure than the normal setpressure as well as through actuating the lifting lever of the valve.

Afterwards the valve has the full function with the pre set pressure.

0906

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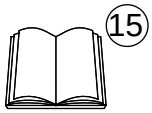
Verschleißerscheinungen an Armaturen
Traces of wear and tear at fittings



Traces of wear and tear at fittings

Our fittings are designed in construction and manufacture in such a way that an optimum in quality and service friendliness is achieved. A minimum of care and maintenance is the result when our fittings are used for application.

Prescribed regular checking, such as pursuant to AD and TRD, is, however, necessary for reasons of safety.

Leakage of fittings occur usually only on account of damage through the medium or through foreign matter at the sealing surfaces (seat and/or cone). Damage of this type can be repaired by lapping of the sealing surfaces it is recommended to have this carried out by specialized technicians.

Regarding the replacement of components of the fittings / spare parts it is also recommended to have this work also carried out only in a specialized workshop. In case there is no suitable repair equipment available, then it is advisable to send the complete fitting to us.

All spare parts supplied by us are suitable for the assembly in our fittings, that is without restriction. It is, however, required to state in your order for spare parts our Delivery note No. / Invoice No. or Consignment No. of the transaction because the fittings supplied are adjusted to the individual case of application.

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Einbauanleitung für Sicherheits- / Entlastungsventile
Mounting Instructions for Safety- / Relief-Valves

Mounting Instructions for Safety- / Relief-Valves

Safety- / Relief-Valves are instruments of high quality and should be handled with care. The cone and the seat are manufactured out of hardened or tempered steel and are grinded and lapped to give positive sealing. If the valve cone and seat were handled improper or faulty they will get defect. We suggest the following:

In and outlets are provided with protective caps. These are to be removed before the installation. The valves may not be thrown (leakage/failure in operation may result).

The whole system has to be rinsed before installation of the valve! If the plant should not be sufficiently clean or in the case of an inappropriate assembly, the valve may be leaky already upon first response. The assembly of the threaded valves should be carried through without using hemp or PTFE-tape. Metal sealing rings are to be preferred.

The Safety- / Relief-Valves have to be fitted vertically with the spindle in an upright position. For a perfect function in the long run it is also necessary to install the valve without tension into the plant.

In order to prevent the misuse of the lifting lever (head "A") it is wired in the closed position. If the mounting is correct and the pressure is arrived at 85 % of the adjusted set pressure the lifting device can be set in motion. The same is valid for lifting heads "B", "D" and "E": To check the head type "C", the valve should be exposed to response pressure only externally by gas or with a perfectly clean plant.

For the valves particularly used in steam applies: routining the functioning by operating the ventilation at least every 4 weeks.

Foreign substances in the pipeline (such as jointing materials) will seriously damage the seating area of the valve. By operating the lifting device small deposits of foreign matters can be effectively cleared from the valve disk and seat. (In doing this, a clear stroke of the valve stem must be achieved).

The feed nozzle for the valve must be as short as possible and must have at least the same nominal width as the valve. The pressure loss in the inlet pipe should not exceed 3 % of the set pressure.

The blow-off pipe should be mounted with downward gradient in sufficient dimensioning. Resulting condensate must be exhausted safely. Inside the blow-off pipe the backpressure of max. 10 % of the set pressure should not be exceeded.

The operating pressure of the plant should be at least 5% below the closing pressure of the valve (pressure peaks in case of piston pumps must be taken into consideration!). Thus a perfect closing of the valve after blow-off is ensured.

Niezgodka GmbH

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Einbauanleitung für Unter- und Überdruckventile

Mounting Instructions for Vacuum and Pressure Relief Valves

Mounting Instructions for Vacuum and Pressure Relief Valves

Suitability
The vacuum and pressure relief valves are suitable for closed vessels and tanks etc. in which the formation of vacuum should be prevented or its excess obviated.

Mounting
The valves must be fitted vertically at the highest point of the declared apparatus.

Description
The construction of the valve results from the corresponding prospectus or drawing. The valves consist of a valve housing with thread or flange connection.

Procedure of ventilating: The valve cone (403) closes through the pressure of the overpressure spring (416) and opens through the overpressure appearing in the vessel.

Procedure of evacuating: The valve cone (404) closes through the pressure of the underpressure spring (415) and opens through the vacuum appearing in the vessel.

The springs are constructed for the desired set pressure.

Working Mode
The valves are used as vacuum limiting valves, not as vacuum control valves. As soon as the allowable vacuumpressure in the tank has been reached, the differential pressure between outside and inside of the vessel overcomes the force of the spring tension. So the valve cone is opened and the air can rush through the borings of the valve into the vessel.

When the setted vacuumpressure is reached again by the inflowing air, the valvespring and the internal pressure of the tank shut the valve.

Servicing
The valves do not need any servicing, if they are mounted carefully and free of dust, so that no pollution could find the way between the moving parts or between seat and cone. But we recommend an annual functional test.

Spare Parts
O-rings and sealings - as in prospectus.

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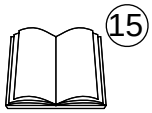
Einbauanleitung für Belüftungsventile
Mounting Instructions for Vacuum Relief Valves



Mounting Instructions for Vacuum Relief Valves

Suitability
The vacuum relief valves are suitable for closed vessels and tanks etc. in which the formation of vacuum should be prevented or its excess obviated.

Mounting
The valves must be fitted vertically at the highest point of the declared apparatus.

Description
The construction of the valve results from the corresponding prospectus or drawing. The valves consist of a valve housing with thread or flange connection. The valve cone closes through spring pressure and opens through the vacuum appearing in the vessel. The springs are constructed for the desired set pressure.

Working Mode
The valves are used as vacuum limiting valves, not as vacuum control valves. As soon as the allowable vacuumpressure in the tank has been reached, the differential pressure between outside and inside of the vessel overcomes the force of the spring tension. So the valve cone is opened and the air can rush through the borings of the valve into the vessel.

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Servicing
The valves do not need any servicing, if they are mounted carefully and free of dust, so that no pollution could find the way between the moving parts or between seat and cone. But we recommend an annual functional test.

Spare Parts
O-rings and sealings - as in prospectus.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

Typ 70 - Baureihe / Series SKM, SKK, SKS, SKG, Typ 70 und 71
Kolbenausführung / piston design

15

Installation and operating instructions for Pressure-Reducing-Valve

1. Installation

The preferred location of pressure reducing valves in pipework systems is where operating conditions are stable, that is not immediately upstream or downstream from bends, branches, pressure devices, stop valve fittings or similar restricting elements, and not adjacent to consumer points. They should be fitted to horizontal sections of the pipe. Where not specified to the contrary, the unit can be fitted with the spring cap up or down. With steam the spring cap must point downwards.
Figures 1 and 2 show the most common position for installing a pressure reducing valve into a pipe. On operationally sensitive installations, i.e. where a fault in the pressure reducing valve could result in an unacceptable breakdown of downstream consumer units, a by-pass with a shut-off device (fig. 3) must be provided.

In the event of a fault, emergency operation can then be maintained via the by-pass. The by-pass must be kept closed during normal operation.
Before installing a pressure reducing valve, the pipework must be carefully cleaned and flushed out. If fouling during operation is unavoidable, a strainer (4) must be fitted. After removing it from its packaging and taking off the plastic caps, the pressure reducing valve is to be fitted to the pipe, taking care to observe the direction of flow (arrow).

Pressure reducing valves are regulating devices, not shut-off elements providing leak-proof seating. According to VDI/VDE Guidelines 2174, a leakage rate of 0.05% of the Kvs-value is permitted. We therefore recommend that a shut-off valve (1) be fitted upstream of the pressure reducing valve.

2. Safety Devices

The Accident Prevention Regulations VBG 17, which stipulates the provision of a safety device, e.g. a safety valve (7), to prevent the maximum permissible pressure from being exceeded in the downstream section of the pipe, must be complied with. The safety valve must be adequately rated.

If a shut-off valve (3) is interposed between the pressure reducing valve (5) and the safety valve (7), for example when a by-pass is fitted as in (fig. 3), it may become necessary to fit a further safety valve (6) to protect the pressure reducing valve. This is the case when the input pressure is greater than the maximum permitted pressure in the output section of the pressure reducing valve. The minimum response pressure of this safety valve should be at least 10% greater than the minimum response pressure of the system safety valve (7). It must not, however, be greater than the nominal pressure on the output side of the pressure reducing valve.
In addition, it is incumbent upon the system operator to ensure that any medium escaping from the spring cap, as a result of the control piston seal or the diaphragm becoming defective, cause no damage. If necessary, a drainage tube must be fitted to the spring cap to conduct any leakage away.

3. Operation

Before leaving the factory, the pressure reducing valve has been checked for leaks and proper functioning and fitted with lightly tightened springs. With steam, it will be necessary to tighten the screws and the ground cap once the pressure reducing valve has throughly heated up. Before putting the valve into operation, the regulating spring should be released (by turning the toggle spindle anticlockwise).
The upstream shut-off element (1) must be opened slowly until the input pressure [pressure gauge (8)] reaches its limit. The output pressure should then be set to required pressure (preset level) whereby there must be some medium consumption on the outlet side. To achieve this, the toggle spindle is turned clockwise, observing the output side pressure gauge (9), until the reduced pressure is reached. Once the adjustment is complete, the toggle spindle should be secured with the locknut. A sharply fluctuating flow or shock pressure loading are to be avoided.

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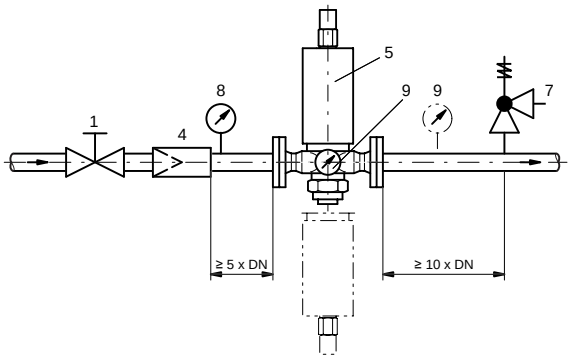
Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

Typ 70 - Baureihe / Series SKM, SKK, SKS, SKG, Typ 70 und 71
Kolbenausführung / piston design

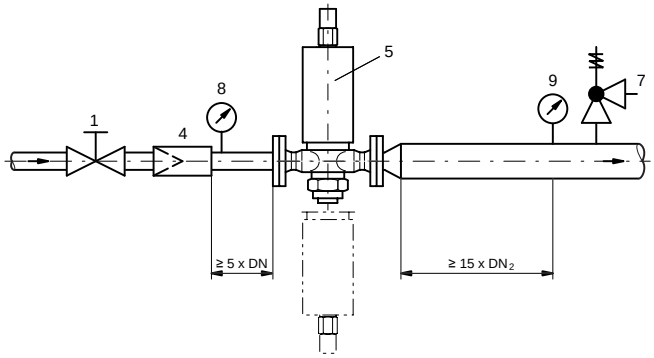
15

Mounting figure of the Pressure-Reducing-Valve



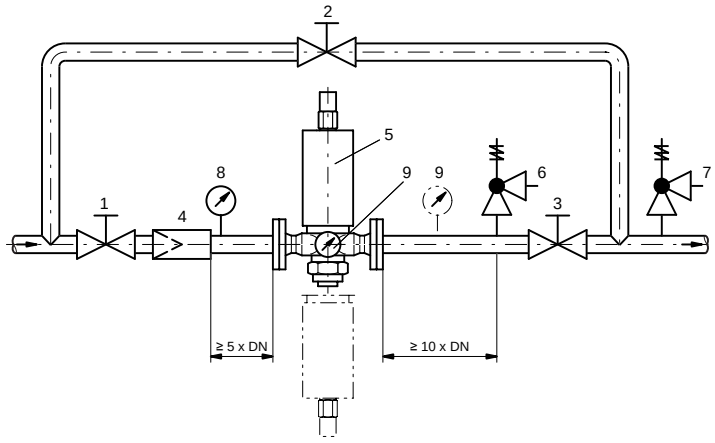
1	Shut-off valve
4	Strainer
5	Pressure reducing valve
7	Safety valve
8, 9	Pressure gauge

Figure 1 : Pressure reducing valve without bypass



1	Shut-off valve
4	Strainer
5	Pressure reducing valve
7	Safety valve
8, 9	Pressure gauge

Figure 2 : Pressure reducing valve with outlet larger than inlet



1, 2, 3	Shut-off valve
4	Strainer
5	Pressure reducing valve
6, 7	Safety valve
8, 9	Pressure gauge

Figure 3 : Pressure reducing valve with bypass

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Unless specified differently the spring cap can face either upwards or downwards.
When the pressure reducer is used for steam, it has to be fitted with the spring cap facing downwards.

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Typ 70 - Baureihe / Series SMK, SMS, Typ 74 und 75
Membranausführung / Diahragm design

15

Installation and operating instructions for Pressure-Reducing-Valve

1. Installation

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Figures 1 and 2 show the most common position for installing a pressure reducing valve into a pipe. On operationally sensitive installations, i.e. where a fault in the pressure reducing valve could result in an unacceptable breakdown of downstream consumer units, a by-pass with a shut-off device (fig. 3) must be provided.

In the event of a fault, emergency operation can then be maintained via the by-pass. The by-pass must be kept closed during normal operation. Before installing a pressure reducing valve, the pipework must be carefully cleaned and flushed out. If fouling during operation is unavoidable, a strainer (4) must be fitted. After removing it from its packaging and taking off the plastic caps, the pressure reducing valve is to be fitted to the pipe, taking care to observe the direction of flow (arrow).

Pressure reducing valves are regulating devices, not shut-off elements providing leak-proof seating. According to VDI/VDE Guidelines 2174, a leakage rate of 0.05% of the Kvs -value is permitted. We therefore recommend that a shut-off valve (1) be fitted upstream of the pressure reducing valve.

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In addition, it is incumbent upon the system operator to ensure that any medium escaping from the spring cap, as a result of the control piston seal or the diaphragm becoming defective, cause no damage. If necessary, a drainage tube must be fitted to the spring cap to conduct any leakage away.

3.Operation

Before leaving the factory, the pressure reducing valve has been checked for leaks and proper functioning and fitted with lightly tightened springs. With steam, it will be necessary to tighten the screws and the ground cap once the pressure reducing valve has throughly heated up. Before putting the valve into operation, the regulating spring should be released (by turning the toggle spindle anticlockwise).
The upstream shut-off element (1) must be opened slowly until the input pressure [pressure gauge (8)] reaches its limit. The output pressure should then be set to required pressure (preset level) whereby there must be some medium consumption on the outlet side. To achieve this, the toggle spindle is turned clockwise, observing the output side pressure gauge (9), until the reduced pressure is reached. Once the adjustment is complete, the toggle spindle should be secured with the locknut. A sharply fluctuating flow or shock pressure loading are to be avoided.

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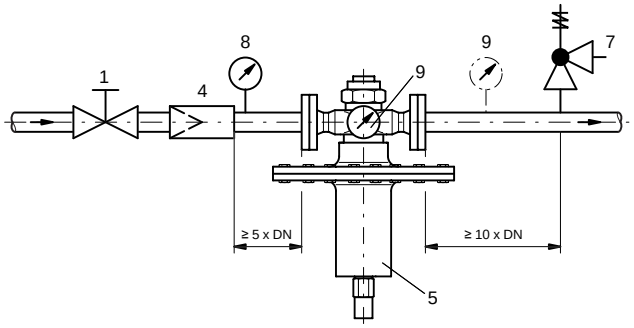
Stainless Steel Pressure-Reducing-Valve

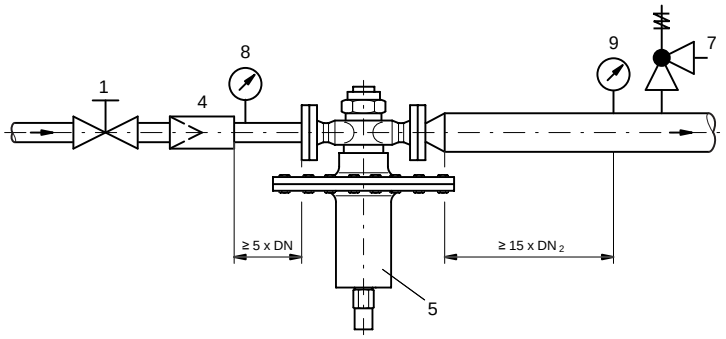
Typ 70 - Baureihe / Series SMK, SMS, Typ 74 und 75
Membranausführung / Diahragm design

Mounting figure of the Pressure-Reducing-Valve



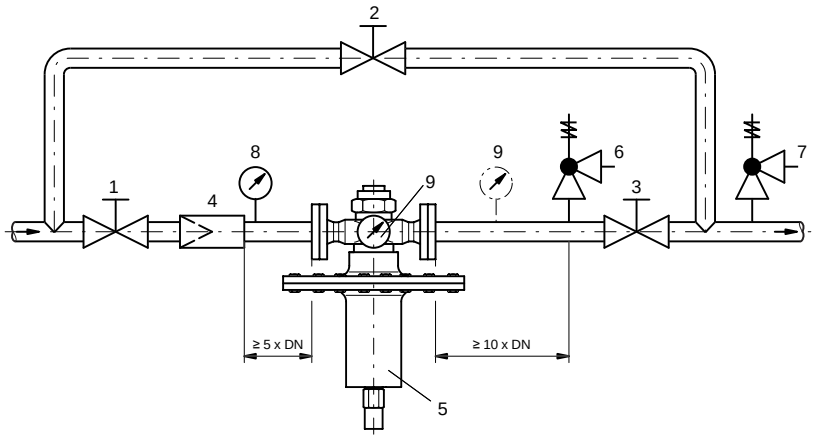
1	Shut-off valve
4	Strainer
5	Pressure reducing valve
7	Safety valve
8, 9	Pressure gauge

Figure 1 : Pressure reducing valve without bypass



1	Shut-off valve
4	Strainer
5	Pressure reducing valve
7	Safety valve
8, 9	Pressure gauge

Figure 2 : Pressure reducing valve with outlet larger than inlet



1, 2, 3	Shut-off valve
4	Strainer
5	Pressure reducing valve
6, 7	Safety valve
8, 9	Pressure gauge

Figure 3 : Pressure reducing valve with bypass

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Edelstahl-Vordruckregelventil
Stainless Steel Inital-Pressure-Controller-Valve

Typ 80 - Baureihe / Series SKK, SKS, SKG, SMK, SMS, Typ 80, 81, 84 und 85

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Installation and operation instructions for-Inital-Pressure-Controller-Valve

1. Installation

Inital pressure controller valves are preferably to be installed at places in pipeline systems with smooth operation conditions, which means, as a consequence, not directly upstream or downstream of elbows, pipe manifolds, distributors, pressure generators, shut-off valves, isolating valves or other throttling devices. The installation should be carried out in horizontally positioned pipeline systems. The spring hood can, unless stated differently, be installed at the bottom or at the top. In the case of liquids, the spring hood should show in the bottom direction; in the case of steam the spring hood must show in the bottom direction.

The Illustrations 1 and 2 show the most frequent way of installation of an inital pressure controller valve in the pipeline. In installations which are highly important for the operation of the plant and whose breakdown would cause an unacceptable stoppage of the plant, a stop-and-check bypass duct (Illustration 3) can be installed. In the case of a breakdown, an emergency operation can be maintained by means of the bypass. Under normal operation conditions, the bypass is to be held closed.

Prior to the installation of the inital pressure controller valve, the pipeline must be cleaned and rinsed carefully. A sediment separator in the form of a dirt catcher (4) is to be provided if a contamination cannot be prevented during operation. After the removal of the packaging material, including plastic closing caps, the installation of the inital pressure controller valve is to be carried out in the pipeline, while the flow direction (arrow) indicated must be observed.

Inital pressure controller valves do not, as regulating valves, represent any sort of check valves which warrant a tight seat. According to VDI/VDE Guideline 2174, a leakage of 0.05 % of the Kvs value is permissible. We recommend, therefore, the installation of an upstream shut-off valve (1).

2. Safety Devices

Inital pressure controller valves are no substitute for safety installations.

The pipeline or installation inserted upstream of the inital pressure controller valve must, for this reason, be secured by means of a safety device, for instance by means of a safety valve. The safety valve must be designed with dimensions sufficiently large. The response pressure of the safety valve should be set approximately 40 percent above the maximum setting pressure of the inital pressure controller valves so that a blowing off at slight pressure fluctuations is avoided. Furthermore, the operator must also safeguard that the medium that is released in case the control piston seal or diaphragm is damaged from the spring hood does not represent an environmental risk. If necessary, a leakage pipeline must be connected at the spring hood.

3. Operation

The inital pressure controller valve has been tested prior to dispatch regarding function and density of the sealing with slightly cocked spring. A re-tensioning of the bolts and of the closing cap is required, in the case of steam, after complete heating of the inital pressure controller valve has been carried out.

The spring should, before the device is taken into operation, be in a released state (can be achieved by rotating the adjusting screw in counter-clockwise direction).

Initially, the downstream checking valve (2) must be opened, and subsequently the upstream checking valve (1) can be opened. Next, the upstream pressure or excess flowing pressure value is to be set to the desired pressure value. For this purpose, the adjusting screw is to be rotated in the clockwise direction until the upstream pressure value is reached. In this connection, the upstream manometer (7) must be observed. The adjusting screw is to be secured by means of the counter nut, after the setting has been completed. Heavily pulsating flows and impulsive pressure loads are to be avoided.

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Typ 80 - Baureihe / Series SKK, SKS, SKG, SMK, SMS, Typ 80, 81, 84 und 85

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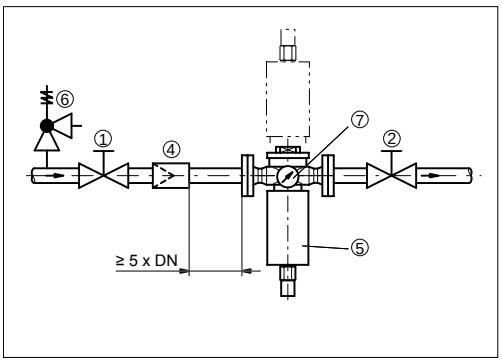
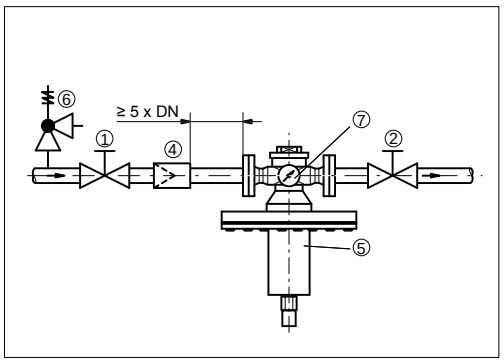
Installation diagram of an inital pressure controller valve

Piston design

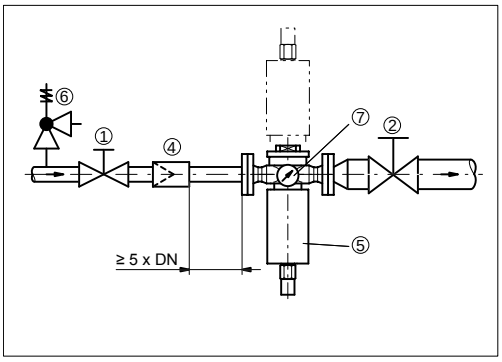


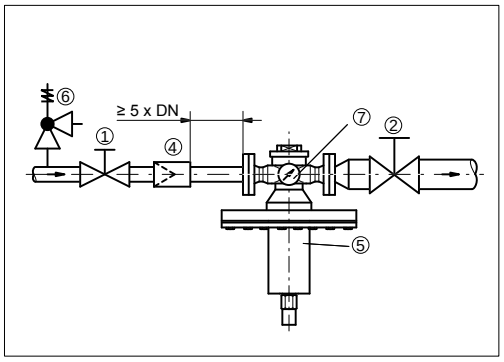
Diaphragm design



①② Shut-off valve
④ Strainer
⑤ Inital-Pressure-Controller-Valve
⑥ Safety valve
⑦ Pressure gauge

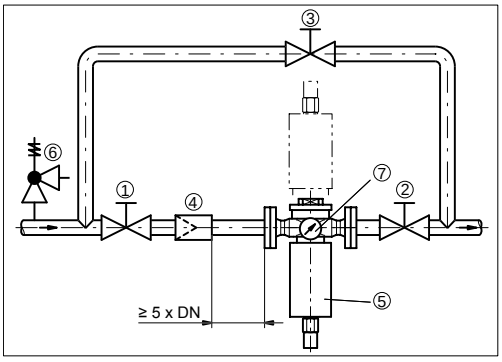
Figure 1 : inital pressure controller valve without bypass pipeline

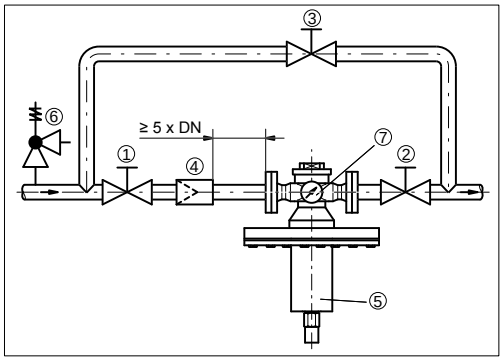




①② Shut-off valve
④ Strainer
⑤ Inital-Pressure-Controller-Valve
⑥ Safety valve
⑦ Pressure gauge

Figure 2 : inital pressure controller valve without bypass pipeline with pipe downstream enlargement at the outlet





①②③ Shut-off valve
④ Strainer
⑤ Inital-Pressure-Controller-Valve
⑥ Safety valve
⑦ Pressure gauge

Figure 3 : inital pressure controller valve with bypass pipeline

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The installation of an inital pressure controller valve is in the case of gases in a standing position, in the case of liquids preferably in a suspended position, in the case of steam only in a suspended position.

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Stainless Steel Pressure-Reducing-Valve

Typ 70 - Baureihe / Series SKK, SKS, Typ 70 und 71
Kolbenausführung / piston design

MAINTENANCE AND REPAIR INSTRUCTIONS

Depending on the medium characteristics and operational situation in the installation, maintenance work and check-ups of the valve function should be scheduled annually or more frequently.
The most frequent cause of malfunctions is debris, and subsequent damages to the soft seals:
Leaks in the piston plate seal (o-ring 350) are indicated by leaking medium at the spring bonnet opening. To eliminate the problem, replace the respective o-ring (350). A severely elevated back pressure during minimal removal indicates a defective soft sealing (062).

Maintenance and repair should be performed as follows:

1) Ensure the tube line and valve body are no longer under pressure.
2) To facilitate the maintenance and repair work, remove the valve body from the tube line.
3) Unscrew cap (120) (only for version with AC or EA option); loosen lock nut (086); completely tension relieve spring (081) by left-turning the pressure screw (085, for options AC and EA without gag); if necessary, remove o-ring (130, for option EA).
4) Loosen and unscrew spring bonnet (030) with hook wrench, combination wrench or tension wrench, if required uninstall o-ring (330, for option EA, between spring bonnet and lower insert).
5) Remove upper spring plate (082) and spring (081).
6) Unscrew cap (357) with seal ring (356). Check whether movable components [piston (300) with piston plate (310), distance ring (311) and lower spring plate (084) on the upper end and disc components (060 - 072)] on the bottom end are running smoothly by pressing against them alternatively.

If they do not run smoothly or if you discover leaks on the seat or piston plate (310), continue with uninstalling:

7) Hold the components installed at the lock nut (314) or screw (324) and loosen disc nut (065).
8) Remove the disc components [adjustment piece (061), disc (060) with o-ring (071), clamp disc (072) and disc seal (062)]. If the disc seal is made from nylon or PTFE, also uninstall o-ring (073).
9) Pull out components [piston (300) with piston plate (310), distance ring (311) and lower spring plate (084)] from the valve-body (301, 302).
10) Remove the o-ring (351) or both o-rings (351) in the CIP version from the valve-body (301, 302).

If required, piston plate (310), piston (300), lower spring plate (084) and distance ring (311) can be uninstalled as follows:

11) Place piston plate (310) axially into bench vice (Warning: use soft splits!) and loosen lock nut (314).
12) Remove lower spring plate (084) and distance ring (311).
13) Remove piston (300) with o-ring (352) from piston plate (310).

After uninstalling and cleaning, you may have to remove pressure points in the surface of the valve-body and of the piston by grinding it with very fine emery paper. If the piston surface looks as if has been eaten into, the piston must always be replaced because the o-ring (351) will no longer be able to seal the destroyed surface.
All soft seals [disc seal (062), o-rings] must be replaced (included in maintenance kit). To install, perform the opposite of the uninstall procedure (last step first, etc.). To lubricate the o-rings and the media-contact surfaces as well as the winding connections (pressure screw, bottom plug, cap) we recommend the food-use lubricant "**gleitmo 591**" (-25°C/+250°C).
The disc nut (065) must be secured with a suitable screw lock (LOCTITE)! Prior to installing the disc nut (065) you will have to check whether the winding connection is smooth, and if not, make sure it is (remove all residue from the screw lock).

When tightening the disc nut (065) you must comply with the following **fastening torque**:

Winding M8: **1,5 Nm**; Winding M10: **3 Nm**; Winding M14 x 1,5: **5 Nm**.

Warning ! If used with oxygen make sure all components are oil and fat-free. For the lubrication of the o-rings, media-contact surfaces and the winding connections only lubricants approved for operation in oxygen environments must be used, for example,
"**gleitmo 594**" (-25°C/+250°C).

SPARE PARTS
When ordering a maintenance kit, please provide the code (indicated on the machine rating label). If it is not available, provide the series or type, the valve number of the valve-body (embossed into the housing) as well as the item number of the components based on the parts list. Please also let us know the material used in the disc seal (062) and the o-rings or provide the description of the flow-through medium.

V-1_engl 09'06

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

Typ 70 - Baureihe / Series SKG, Typ 71, BG IV / V
Kolbenausführung / piston design

MAINTENANCE AND REPAIR INSTRUCTIONS

Depending on the medium characteristics and operational situation in the installation, maintenance work and check-ups of the valve function should be scheduled annually or more frequently.
The most frequent cause of malfunctions is debris, and subsequent damages to the soft seals:
Leaks in the piston plate seal (o-ring 350) are indicated by leaking medium at the spring bonnet opening. To eliminate the problem, replace the respective o-ring (350). A severely elevated back pressure during minimal removal indicates a defective soft sealing (062).

Maintenance and repair should be performed as follows:

1) Ensure the tube line and valve body are no longer under pressure.
2) To facilitate the maintenance and repair work, remove the valve body from the tube line.
3) Unscrew cap (120) (only for version with AC or EA option); loosen lock nut (086); completely tension relieve spring (081) by left-turning the pressure screw (085, for options AC and EA without gag); if necessary, remove o-ring (130, for option EA).
4) Unscrew screws (025) of the spring bonnet (030) and take off the spring bonnet (030), if required uninstall o-ring (330, for option EA, between spring bonnet and valve-body).
5) Remove upper spring plate (082) and spring (081).
6) Check whether movable components [piston (300) with piston plate (317), distance ring (311) and lower spring plate (084) on the upper end and disc components (060 - 074)] on the bottom end are running smoothly by alternating application of pressure.

If they do not run smoothly or if you discover leaks on the seat, piston guide (317) or piston plate (310), continue with uninstalling:

7) Unscrew piston guide screw (347) from the bottom plug (357) and remove the o-ring (348).
8) Unscrew bottom plug screws (359)/(357) and remove bottom plug (357) with o-ring (353).
9) Hold piston (300) at the horizontal drill hole with a suitable spike and loosen the disc nut (065).
10) Remove the disc components (pressure piece (061), disc (060) with o-ring (071), clamp disc (072), disc seal (062) and disc plate (074) with o-ring (073)) from the piston (300).
11) Pull out components [piston (300) with piston guide (317), piston plate (310), distance ring (311) and spring plate (084)] from the valve-body (302).
12) Remove both o-rings (351) from the valve-body (302).
13) Remove o-ring (350) from the piston plate (310) and the o-ring (373) from the piston (300).

If required, the piston (300) with piston guide (317), piston plate (310), distance ring (311) and spring plate (084) may be uninstalled as follows:

14) Hold piston (300) at the horizontal drill hole with a spike and loosen both lock nuts (314).
15) Remove the lower spring plate (084), the distance ring (311), the piston plate (310) and the piston guide (317) from the piston (300).
16) Remove the o-ring (352) from the piston guide (317) and the o-ring (355) from the piston (300).

After uninstalling and cleaning, you may have to remove pressure points in the surface of the valve-body and of the piston by grinding it with very fine emery paper. If the piston surface looks as if has been eaten into, the piston must always be replaced because the o-ring (351) will no longer be able to seal the destroyed piston surface (317).
All soft seals [disc seal (062), o-rings] must be replaced (included in maintenance kit). To install, perform the opposite of the uninstall procedure (last step first, etc.). To lubricate the o-rings and the media-contact surfaces as well as the winding connections (pressure screw, bottom plug, cap) we recommend the food-use lubricant "**gleitmo 591**" (-25°C/+250°C).
The disc nut (065) must be secured with a suitable screw lock (LOCTITE)! Prior to installing the disc nut (065) you will have to check whether the winding connection is smooth, and if not, make sure it is (remove all residue from the screw lock). The piston nut (065) must be tightened with a **torque of 30 Nm**.

Warning ! If used with oxygen make sure all components are oil and fat-free. For the lubrication of the o-rings, media-contact surfaces and the winding connections only lubricants approved for operation in oxygen environments must be used, for example,
"**gleitmo 594**" (-25°C/+250°C).

SPARE PARTS
When ordering a maintenance kit, please provide the code (indicated on the machine rating label). If it is not available, provide the series or type, the valve number of the valve-body (embossed into the housing) as well as the item number of the components based on the parts list. Please also let us know the material used in the disc seal (062) and the o-rings or provide the description of the flow-through medium.

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Edelstahl-Druckminderventil
Stainless Steel Pressure-Reducing-Valve

Typ 70 - Baureihe / Series SMK, SMS, Typ 74 und 75
Membranausführung / diahragm design

MAINTENANCE AND REPAIR INSTRUCTIONS

Depending on the medium characteristics and operational situation in the installation, maintenance work and check-ups of the valve function should be scheduled annually or more frequently.
The most frequent cause of malfunctions is debris, and subsequent damages to the soft seals:
Leaks in the piston plate seal (o-ring 350) are indicated by leaking medium at the spring bonnet opening. To eliminate the problem, replace the respective o-ring (350). A severely elevated back pressure during minimal removal indicates a defective soft sealing (062).

Maintenance and repair should be performed as follows:

1) Ensure the tube line and valve body are no longer under pressure.
2) To facilitate the maintenance and repair work, remove the valve body from the tube line.
3) Unscrew cap (120) (only for version with AC or EA option); loosen lock nut (086); completely tension relieve spring (081) by left-turning the pressure screw (085, for options AC and EA without gag); if necessary, remove o-ring (130, for option EA).
4) Loosen and unscrew spring bonnet (030) with hook wrench, combination wrench or tension wrench, if required uninstall o-ring (330, for option EA, between spring bonnet and lower insert).
5) Remove upper spring plate (082) and spring (081).
6) Unscrew bottom plug (357) with seal ring (356. Check smooth running of movable components [piston (300) with diaphragm (245), clamp plate (243, 247), distance ring (311) and lower spring plate (084) on the top and disc components (060 - 072) on the bottom] through alternating application of pressure.

If they do not run smoothly or if you detect leaks at the seat or diaphragm, continue to uninstall:

7) Loosen screw (244) and remove it from the diaphragm housing (241, 242), take of upper housing (241).
8) Hold components are the lock nut (314) and loosen the disc nut (065).
9) Remove the disc components [adjustment piece (061), disc (060) with o-ring (071), clamp disc (072) and clamp seal (062)]. If the disc seal is made from nylon or PTFE, also uninstall o-ring (073).
10) Pull out components [piston (300) with diaphragm (245), clamp plates (243, 247), distance ring (311) and lower spring plate (084)] from the valve-body (303).
11) Remove the o-ring (351) or both o-rings (351) in the CIP-version from the valve-body (303).

If required, the diaphragm components and pistons (300) can be uninstalled as follows:

12) Place piston (300) into a bench vice below the lower clamp plate (247) (Warning, use soft splits!) and loosen lock nut (314).
13) Remove lower spring plate (084), if applicable, distance ring (311) and upper clamp late (243); then the diaphragm (245) and foil, if applicable, at the medium-end (256).
14) Remove lower clamp plate (247), possibly with o-ring (249) from the piston (300). For version option EA first remove the lower clamp plate (247) with the large diameter and then lift the smaller lower clamp plate with o-ring (249) off the piston (300). Uninstall o-ring (254).

After uninstalling and cleaning, you may have to remove pressure points in the surface of the valve-body and of the piston by grinding it with very fine emery paper. If the piston surface looks as if has been eaten into, the piston must always be replaced because the o-ring (351) will no longer be able to seal the destroyed surface.
All soft seals [disc seal (062), o-rings and Diaphragm (if needed)] must be replaced (included in maintenance kit). To install, perform the opposite of the uninstall procedure (last step first, etc.). To lubricate the o-rings and the media-contact surfaces as well as the winding connections (pressure screw, bottom plug, cap) we recommend the food-use lubricant "**gleitmo 591**" (-25°C/+250°C).
The disc nut (065) must be secured with a suitable screw lock (LOCTITE)! Prior to installing the disc nut (065) you will have to check whether the winding connection is smooth, and if not, make sure it is (remove all residue from the screw lock).

When tightening the disc nut (065) you must comply with the following **fastening torque**:

Winding M8: **1,5 Nm**; Winding M10: **3 Nm**; Winding M14 x 1,5: **5 Nm**.

Warning ! If used with oxygen make sure all components are oil and fat-free. For the lubrication of the o-rings, media-contact surfaces and the winding connections only lubricants approved for operation in oxygen environments must be used, for example,
"**gleitmo 594**" (-25°C/+250°C).

SPARE PARTS
When ordering a maintenance kit, please provide the code (indicated on the machine rating label). If it is not available, provide the series or type, the valve number of the valve-body (embossed into the housing) as well as the item number of the components based on the parts list. Please also let us know the material used in the disc seal (062), diaphragm (245) and the o-rings or provide the description of the flow-through medium.

V-3_engl 09'06

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

Typ / type 80 - Baureihe/Series SKK und SKS, Typ / type 80 und 81
Kolbenausführung / piston design

15

INSTRUCTIONS FOR MAINTENANCE AND REPAIR

For repair or maintenance, proceed as follows: Depending upon the properties of the medium and of the operating conditions, maintenance should be carried out annually, if not at shorter intervals, or the functioning of the valve should be checked.
The cause of faults is usually to be found in the build-up of dirt or in the following damage to the soft seals: Leaking at the control piston seal (o-ring 350) is indicated by the seepage of medium at the spring cap opening or at the leak coupling sleeve (when connected to a pipe). For removal the appropriate o-ring (350) is to be renewed. A medium stream and/or a rising pressure in the downstream line with closed valve refers to a defective disc (062) and/or a defective o-ring (351).

For repair or maintenance, proceed as follows:

1) Remove pressure from the pressure controler or pipe.
2) To facilitate the repair or maintenance work, remove the pressure controler from the pipework.
3) Unscrew the cap (120) (on pressure controler valve models with gas-tight cap), release the locknut (086), completely release the spring (081) by turning the toggle spindle or the adjusting screw (085, with option of AC and EA without adjusting screw) counter clockwise, remove the o-ring (130, on EA models).
4) Unscrew the spring bonnet (030) using a hooked, fixed or adjustable wrench, and remove it. If present, take out the o-ring (330).
5) Remove the spring (081) and the upper springplate (082).
6) Remove the bottom cap (357) and the sealing ring (356). Check that the valve parts [inlet pressure piston (304) and piston plate (310), distance bush (311), lower springplate (084) and lock nut (314) on the upper side, a nd piston (300) with lift stopper (079) and srew (347) downside)] move freely.

If they are stiff or if the seat or the piston are seen to leak, disassembly should be continued:

7) Holding the control parts with an adjustable wrench applied to the lock nut (314) and unscrew the disc bolt (065) on the disc. Before further disassembly of the mounting parts, first the LOCTITE screw locking between the threaded stem of the piston (300) and the inlet pressure piston (304) is to break loose. In addition holding the mounting parts with a wrench applied to the screw (347) of the piston (300) and tighten the lock nut (314) at the lower spring plate (084) (turning clockwise). By the giving way disc (062) the LOCTITE srew locking breaks loose.
8) Hold the mounting parts at the screw (347) and loose and remove the inlet pressure piston (304) with the piston plate (310), the distance bush (311), the lower spring plate (084) from the piston (300) by turning the lock nut (314) anti clockwise.
9) Dismount the disc parts [disc thrust piece (061) with o-ring (071), disc (060), connection plate (072) and disc (062)] and pull out the piston (300) with stroke limiter (079) and screw (347) from the initial pressure controller (301, 302). If the discsealing is Nylon or PTFE also remove o-ring (073).
10) Remove the piston o-ring (351) from the initial pressure controller (301, 302).

If necessary, the inlet pressure piston (304), the piston plate (310), the distance bush (311) and the lower spring plate (084) can be dismantled as follows:

11) Clamp the piston plate (310) axially in a vice, (important: use soft jaw pads!) and unscrew the lock nut (314).
12) Remove the lower springplate (084) and the distance bush (311).
13) Remove the inlet pressure piston (304) with o-ring (352) from the piston plate (310). Dismantle the o-ring (352) and the o-ring (350).

After disassembly, any high spots on the components have to be taken down with fine emery cloth.

All the soft seals (disc sealing (062) and the o-rings) have to be replaced (included in set of spare parts). Reassemble the unit by following the above instructions in reverse order. We recommend that "**gleitmo 591**" (-25°C/+250°C), also for fodstuff approved grease, can be used for lubricating the o-ring seals and guide surfaces in contact with the medium, and also for threads (adjusting screw, bottom plug and cap). The connection piston (300) and inlet pressure piston (304) is to be secured by the application of "Loctite". Before installing, check if the thread is complete clean and free of residual- "Loctite". The thread-connection piston (300) / inlet pressure piston (304) must be soft running.

The tightening torques for the disc bolt (065) are the following:

thread dimension M8: 1,5 **Nm**; thread dimension M10: **3 Nm**; thread dimension M14 x 1,5: **5 Nm**.

Warning ! Keep all parts free of oil or grease when using with oxygen !
For the lubrication of the O-ring seals, the guide surfaces in contact with the medium, and the screw connections, only use lubricant especially approved for use in oxygen atmospheres, e.g. "**gleitmo 594**" (-25°C/+250°C).

SPARE PARTS
When ordering spare parts, state the code number (marked on the type label). If the code number is not available, the delivery note number and date, the factory number of the valve (stamped on the valve body), the series, type and the item numbers of the component as given in our spare parts list, must all be communicated. In addition, we request that the material of the soft sealing (062) and of the o-rings (EPDM, FPM) also will be stated.

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Vordruckregler, federbelastet
Initial-Pressure-Controller, springloaded

Typ / type 80 - Baureihe/Series SMK und SMS, Typ / type 84 und 85
Membranausführung / diahragm design

15

INSTRUCTIONS FOR MAINTENANCE AND REPAIR

For repair or maintenance, proceed as follows: Depending upon the properties of the medium and of the operating conditions, maintenance should be carried out annually, if not at shorter intervals, or the functioning of the valve should be checked.
The cause of faults is usually to be found in the build-up of dirt or in the following damage to the soft seals: Damage of the diaphragm is indicated by the seepage of medium at the spring cap opening or at the leak coupling sleeve (when connected to a pipe). For removal the appropriate diaphragm (245) is to be renewed. A medium stream and/or a rising pressure in the downstream line with closed valve refers to a defective disc (062) and/or a defective o-ring (351).

For repair or maintenance, proceed as follows:

1) Remove pressure from the pressure controler or pipe.
2) To facilitate the repair or maintenance work, remove the pressure controler from the pipework.
3) Unscrew the cap (120) (on pressure controler valve models with gas-tight cap), release the lock nut (086), completely release the spring (081) by turning the toggle spindle or the adjusting screw (085, with option of AC and EA without adjusting screw) counter clockwise, remove the o-ring (130, on EA models).
4) Unscrew the spring bonnet (030) using a hooked, fixed or adjustable wrench, and remove it. If present, take out the o-ring (330, on EA models).
5) Remove the spring (081) and the upper spring plate (082).
6) Remove the bottom plug (357) and the o-ring (356). Check that the valve parts (membrane parts on the upper side, and piston downside), move freely.

If they are stiff or if the seat or the piston are seen to leak, disassembly should be continued:

7) Unsrew the screws (244) from the diaphragm housing, and remove the upper housing (241).
8) Before further disassembly of the mounting parts, first the LOCTITE screw locking between the threaded stem of the piston (300) and the inlet pressure piston (304) is to break loose. In addition holding the mounting parts with a wrench applied to the screw (347) of the piston and tighten the lock nut (314) of the diaphragm assembly (turning clockwise). By the giving way disc (062) the LOCTITE srew locking breaks loose.
9) Hold the mounting parts at the screw, (347) and by turning the lock nut (314) anti clockwise release the diaphragm assembly (304,247,245,243,084) from the piston (300) and remove it from the body.
10) Dismount the disc parts [disc pressure piece (061) with o-ring (071), disc (060), locking ring (072) and disc (062)] and pull out the piston (300) from the initial pressure controller body (303). If the discsealing is Nylon or PTFE also remove o-ring (073).
11) Remove the piston o-ring (351) from the initial pressure controller body (303).

If necessary, the diaphragm parts and the inlet pressure piston (304) can be dismantled as follows:

12) Clamp the inlet pressure piston (304) underneath of the lower clamp plate (247) in a vice, (important: use soft jaw pads!) and unscrew the lock nut (314). Remove the lower spring plate (084) and the upper clamp plate (247), and dismount the diaphragm and, if present, the PTFE-Foil.
13) Dismount the lower clamp plate and the o-ring (249) from the inlet pressure piston (304).

After disassembly, any high spots on the components have to be taken down with fine emery cloth. If there are score grooves at the piston surface, the piston generally is to be renewed.
All the soft seals (disc sealing (062) and the o-rings) have to be replaced (included in set of spare parts). Reassemble the unit by following the above instructions in reverse order. We recommend that "**gleitmo 591**" (-25°C/+250°C), also for fodstuff approved grease, can be used for lubricating the o-ring seals and guide surfaces in contact with the medium, and also for threads (adjusting screw, bottom plug and cap). The connection piston (300) and inlet pressure piston (304) is to be secured by the application of "Loctite". Before installing, check if the thread is complete clean and free of residual- "Loctite". The thread-connection piston (300) / inlet pressure piston (304) must be soft running.

The tightening torques for the disc bolt (065) are the following:

thread dimension M8: **1,5 Nm**; thread dimension M10: **3 Nm**; thread dimension M14 x 1,5: **5 Nm**.

Warning ! Keep all parts free of oil or grease when using with oxygen !
For the lubrication of the o-ring seals, the guide surfaces in contact with the medium, and the screw connections, only use lubricant especially approved for use in oxygen atmospheres, e.g. "**gleitmo 594**" (-25°C/+250°C).

SPARE PARTS
When ordering spare parts, state the code number (marked on the type label) If the code number is not available, the delivery note number and date, the factory number of the valve (stamped on the valve body), the series, type and the item numbers of the component as given in our spare parts list, must all be communicated. In addition, we request that the material of the soft sealing (062) and of the o-rings (EPDM, FPM) also will be stated.

R-2_engl 09'06

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