Sizing - Medium				
1000	Designation	Water		
1004	Formula	H2O		
1005	Density	ρ	998	kg/m³
1006	Viscosity	μ or ṅ		

Sizing - Service condition				
1009	Case for blow off	Overfilling by CIP Pump (pressure failure)		
1100	Maximum allowable working pressure			
1101	Set pressure	p	6	bar-g
1102	Constant superimposed back pressure	paf		
2102	Variable superimposed back pressure			
1103	Built up back pressure	pae	0.018	bar
1104	Backpressure		0.018	bar-g
1105	Overpressure	dp	10.00	%
1106	Environmental pressure	pu	1.013	bar
1107	Relieving Temperature	T	20	°C
1111	Operating Temperature		20	°C
1108	Required massflow	qm,ab		
1109	Volume flow to be discharged (working condition)	qvb,ab		

Inlet pipe				
1195	Calculation according to		ISO 4126-9	
1160	Length of inlet pipe	Le	0.3	m
1161	Inlet pipe diameter	De	29.7	mm
1162	Equivalent pipe roughness	K	0.020	
1173	Distance valve seat to liquid level (above tank)	H		
1163	Pipe friction coefficient	λ	0.018	
1164	Coefficient of resistance of the straight pipe line	ζ	0.180	
1165	Coefficient of resistance of other fittings	ζ_i	0.350	
1166	Coefficient of resistance complete pipe line	ζ	0.530	
1167	Coefficient of resistance permitted	ζz	4.265	
1168	Pressure loss	Δpr	0.029	bar
1169	Pressure loss based on p - paf (%)		0.49	%
1170	Allowed pressure loss based on p-paf (%)	Δp	3.00	%
1171	Maximum length of inlet pipe	Lmax	6.51	m
1172	Maximum length of the inlet pipe without pipe components		7.092	m

Inlet components					
Denomination			**Q**	**Zeta**	**Q * Zeta**
Right angled T-pieces: socked sharp edged fit in through pass			1	0.350	0.35
Total coefficient of resistance					**0.350**

Outlet pipe				
1196	Calculation according to		ISO 4126-9	
1189	Coefficient of resistance for all pipe segments	ζ_i	1.840	
1194	Built-up backpressure ratio		0.30	%
1187	Distance valve seat to liquid level (above tank)	H		

Outlet pipe segment #1				
1180	Length of outlet pipe	La	3	m
1181	Inner diameter outlet pipe	Da	44.3	mm
1182	Equivalent pipe roughness	K	0.070	

1183	Pipe friction coefficient	λ	0.022	
1185	Effective coefficient of resistance of the straight pipe line	ζ,Rohr	1.490	
1186	Effective coefficient of resistance of other fittings	ζ,Einb	0.350	
1188	Effective coefficient of resistance of complete pipe segment	ζ	1.840	
1190	Maximum length of outlet pipe	Lmax	216.3	m

Components of the outlet pipe segment #1				
Name	**Zeta**	**Eff. Zeta**	**Quantity**	**Eff. total**
Miscellaneous pipe-component	0.350	0.35	1	0.35
Total coefficient of resistance				**0.350**

Sizing - Calculation				
1200	Certified massflow	qm,zu	6,912.758	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	6.927	m³/h
1203	Certified volumeflow (standard condition)	qvn,zu		
1204	Maximum mass flow	qm,max	7,680.842	kg/h
1205	Maximum volume flow (working condition)	qvb,max	7.696	m³/h
1206	Maximum volume flow (standard condition)	qvn,max		
1207	Capacity exceed			

Valve - General			
1500	Article number		4834.7702
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.6
1502	Certified coefficient of discharge for liquid	K,F	0.4
1505	Bonnet / Lifting device		Cap H2
1506	Body-/ Inlet base material		1.4435 / 316L
1511	Bonnet		Closed Bonnet
1514	Order code	4834.7702-6 bar_g-L79I16L86A16-3.2	

Inlet connection		
1300	Pipe standard	DIN 11850
1303	Connection standard	DIN 32676
1304	DN / NPS	25
1360	Code	SO
1305	PN / PR	16
1302	Information	Clamp acc. to DIN 32676 DN 25 (pipe standard acc. to DIN 11850)

Outlet connection		
1350	Pipe standard	DIN 11850
1353	Connection standard	DIN 32676
1354	DN / NPS	25
1361	Code	SO
1355	PN / PR	16
1352	Information	Clamp acc. to DIN 32676 DN 25 (pipe standard acc. to DIN 11850)

Valve - Dimensions				
1400	Discharge area	Ao	132.732	mm²
1401	Discharge diameter	do	13	mm
1402	Centre to Face dimensions	a	29	mm
1403	Centre to Face dimensions	b	52	mm
1405	Height	H	179.2	mm
1406	Weight	M	1.6	kg

Lift				
1507	Standard		2.5	mm

Valve - Calculation				
1200	Certified massflow	qm,zu	6,912.758	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	6.927	m³/h
1203	Certified volumeflow (standard condition)	qvn,zu		
1204	Maximum mass flow	qm,max	7,680.842	kg/h
1205	Maximum volume flow (working condition)	qvb,max	7.696	m³/h
1206	Maximum volume flow (standard condition)	qvn,max		
1207	Capacity exceed			
1600	Required actual discharge area	Ao, req		
1601	Required discharge diameter	do,req		
1612	Reaction force (acc. to ISO / CD 4126-9)	Fr	10.162	N
1618	Cold differential test pressure	CDTP	6	bar-g
1620	Cold differential test pressure, manually	CDTP		

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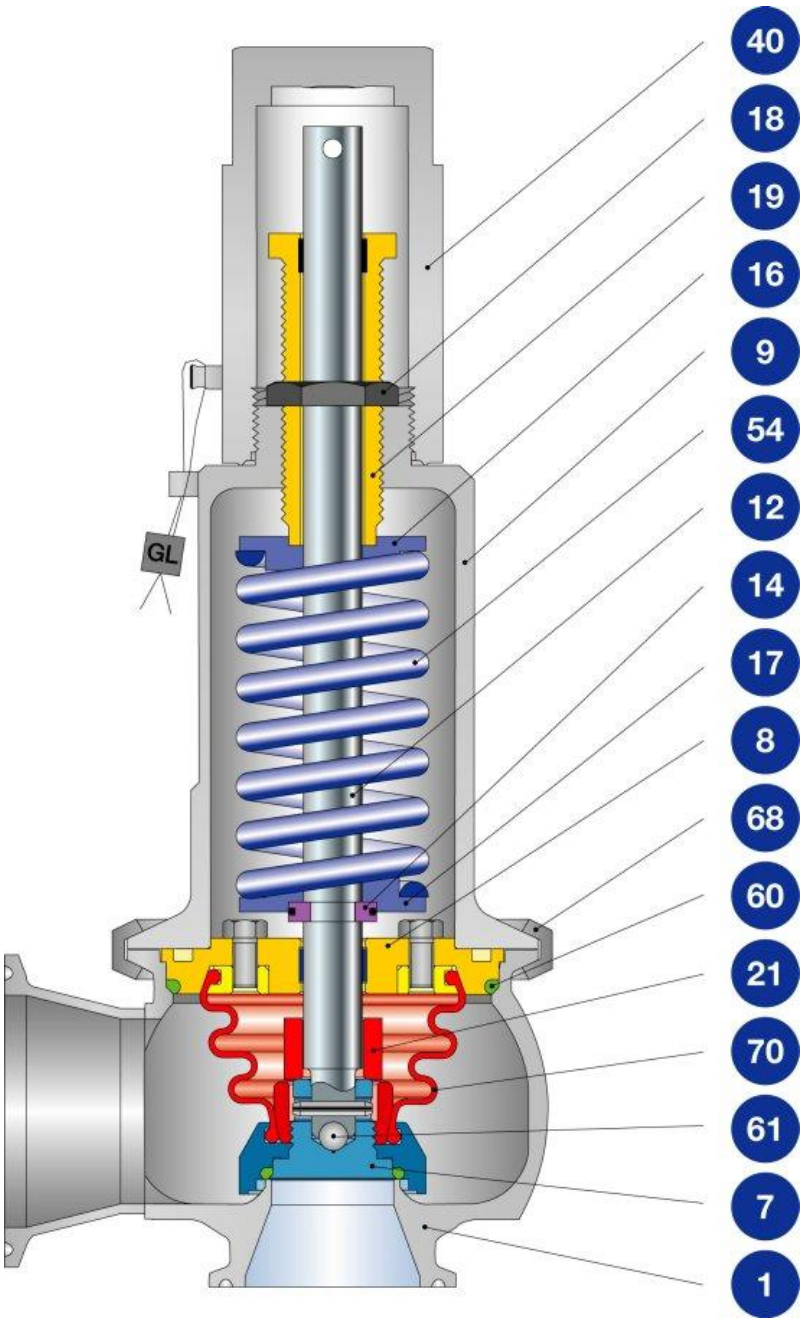
Valve - Part list

PosNo		Denomination	Q	Material ASME	Material DIN	
12010	1	Body incl. Seat	1	316L	1.4435	
12070	7	O-ring-disc	1	316L	1.4435	
12080	8	Guide	1	316L	1.4435	
12090	9	Bonnet	1	316L	1.4404	
12120	12	Spindle	1	316Ti	1.4571	
12160	16	Spring plate	2	316L	1.4404	
12180	18	Adjusting screw	1	316L	1.4404	
12190	19	Lock nut	1	316L	1.4404	
12210	21	Lift stopper	1	316L	1.4404	
12400	40	Cap H2	1	316L	1.4404	
12570	57	Pin	1	Stainless steel	1.4310	
12600	60	O-ring	1	Stainl. steel/polyamid	A2 / Poly	
12610	61	Ball washer	1	Hardened Stainless steel/316	1.3541/1.4401	
12680	68	Ring	1	B8M	1.4401	
12700	70	Elastomer bellows	1	Stainl. steel/polyamid	A2 / Poly	

Drawing



Drawing is a view; the effective geometry could deviate from this view.

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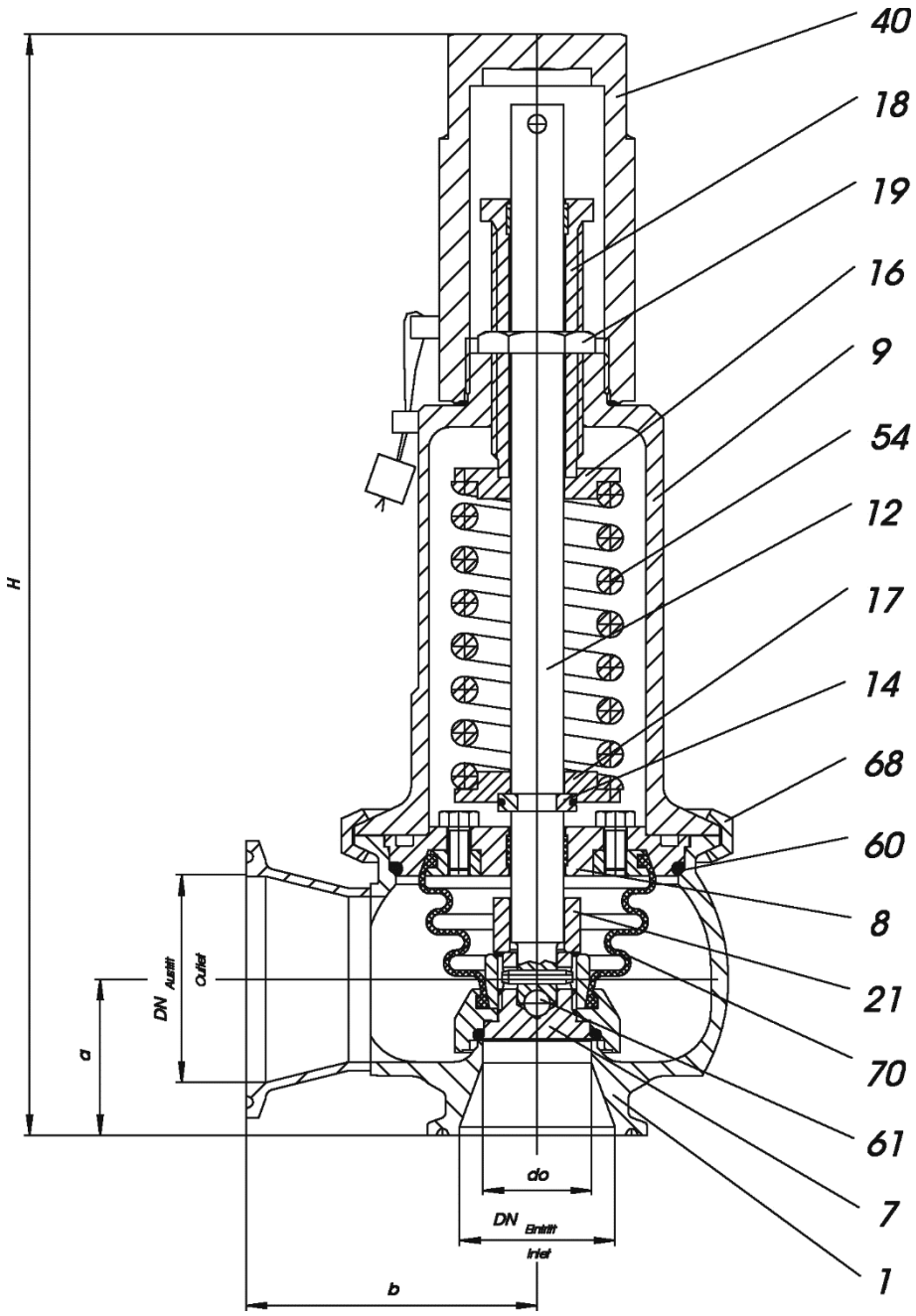
Drawing



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