 The-Safety-Valve.com	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	1 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project_R.1
		Tag No:	610PSV600
		LESER Job №	


Project: NFRI18_#1 Project_R.1	
Client	NFRI
Project site	Deajeon

Sizing - Medium				
1000	Designation	Helium		
1004	Formula	He		
1001	Molar mass	M	4	kg/kmol
1002	Ratio of specific heats	k	1.630	
1003	Compressibility factor	Z	1.000	

Sizing - Service condition				
1100	Maximum allowable working pressure			
1101	Set pressure	p	0.5	bar-g
1102	Constant superimposed back pressure	paf		
2102	Variable superimposed back pressure			
1103	Built up back pressure	pae		
1104	Backpressure			
1105	Overpressure	dp	0.10	bar
1106	Environmental pressure	pu	1.013	bar
1107	Relieving Temperature	T	-263	°C
1111	Operating Temperature		-263	°C
1108	Required massflow	qm,ab		
1109	Volume flow to be discharged (working condition)	qvb,ab		
1110	Volume flow to be discharged (std condition) [T=15 °C P=101,325 Pa]	qvn,ab		

Sizing - Calculation				
1200	Certified massflow	qm,zu	1,799.847	kg/h
1201	Certified volume flow (operating condition)	qvb,zu	235.378	m³/h
1203	Certified volume flow (standard condition)	qvn,zu	10,639.059	m³/h
1204	Maximum mass flow	qm,max	1,999.83	kg/h
1205	Maximum volume flow (working condition)	qvb,max	261.531	m³/h
1206	Maximum volume flow (standard condition)	qvn,max	11,821.176	m³/h
1207	Capacity exceed			

Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				

 The-Safety-Valve.com	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	2 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project R.1
		Tag No:	610PSV600
		LESER Job N°	

Valve - General			
1500	Article number		4414.5702
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.604
1502	Certified coefficient of discharge for liquid	K,F	0.45
1503	Lift characteristic steam/gas		Full Lift Safety Valve
1504	Lift characteristic liquid		Safety Relief Valve
1505	Bonnet / Lifting device		Cap H2
1506	Body-/ Inlet base material		1.4408 / SA 351 CF8M
1511	Bonnet		Closed Bonnet
1514	Order code	4414.5702-0.5 bar_g- H64H79J49J85H03M86N68H01L23L59- 3.1	

Inlet connection		
1303	Connection standard	acc. to ASME B16.5
1304	DN / NPS	1 1/2"
1305	PN / PR	#150
1306	Flange facing	RF

Outlet connection		
1353	Connection standard	acc. to ASME B16.5
1354	DN / NPS	2 1/2"
1355	PN / PR	#150
1356	Flange facing	RF

Valve - Dimensions				
1400	Discharge area	Ao	1,075.21	mm ²
1401	Discharge diameter	do	37	mm
1402	Centre to Face dimensions	a	129.5	mm
1403	Centre to Face dimensions	b	121	mm
1405	Height	H	496	mm
1406	Weight	M	19	kg
1411	Inlet flange thickness incl. raised face	S1	27	mm

Lift			
1507	Standard		9 mm

Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				

<div><div>LESER</div><div>The-Safety-Valve.com</div></div>	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	3 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project_R.1
		Tag No:	610PSV600
		LESER Job №	

Valve - Calculation				
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1201	Certified volume flow (operating condition)	qvb,zu	235.378	m³/h
1203	Certified volume flow (standard condition)	qvn,zu	10,639.059	m³/h
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1205	Maximum volume flow (working condition)	qvb,max	261.531	m³/h
1206	Maximum volume flow (standard condition)	qvn,max	11,821.176	m³/h
1207	Capacity exceed			
1600	Required actual discharge area	Ao, req		
1601	Required discharge diameter	do,req		
1618	Cold differential test pressure	CDTP	0.5	bar-g
1620	Cold differential test pressure, manually	CDTP		

Valve - Accessories	
J49	Disc: with sealing plate material VESPEL-SP1
J85	Version: oil- and grease-free acc. to LWN 325.03,

Valve - Inspections	
H03	LESER CGA: Inspection certificate 3.1 acc. to DIN EN 10204, Declaration of conformity acc. to PED 97/23/EC
M86	Seat tightness test with helium, leakage detection in vacuum – Inspection certificate 3.1 included
N68	UV Stamp

Valve - Material certificates	
H01	Material test certificate for body acc. to DIN EN 10204-3.1
L23	Material test certificate for disc acc. to DIN EN 10204-3.1
L59	Inspection certificate seat/nozzle: EN 10204-3.1.B

Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				

<div><div>LESER</div><div>The-Safety-Valve.com</div></div>	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	4 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project_R.1
		Tag No:	610PSV600
		LESER Job №	

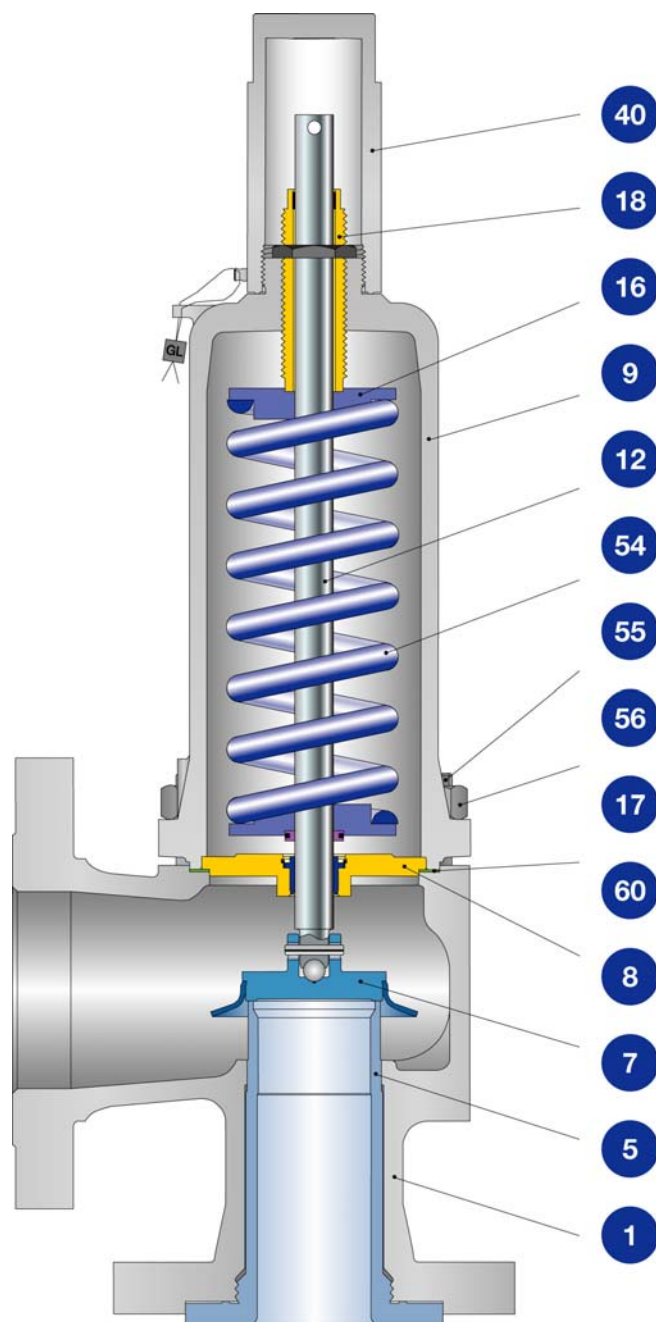
Valve - Part list					
	PosNo	Denomination	Q	Material ASME	Material DIN
12010	1	Body	1	SA 351 CF8M	1.4408
12050	5	Seat	1	316L	1.4404
12070	7	Soft seal disc, with sealing plate	1	316L / SP	1.4404 / SP
12080	8	Guide	1	316L	1.4404
12090	9	Bonnet	1	SA 351 CF8M	1.4408
12120	12	Spindle	1	316L	1.4404
12140	14	Split ring	2	316L	1.4404
12160	16	Spring plate	1	316L	1.4404
12170	17	Spring plate	1	316L	1.4404
12180	18	Adjusting screw	1	316L	1.4404
12190	19	Lock nut	1	316L	1.4404
12400	40	Cap H2	1	316L	1.4404
12540	54	Spring	1	Stainless steel	1.4310
12550	55	Bolt	4	B8M	1.4401
12560	56	Nut	4	2H	1.0501
12570	57	Pin	1	Stainless steel	1.4310
12600	60	Gasket	1	Graphite/1.4401	Reingraphit + 1.4401
12610	61	Ball washer	1	Hardened Stainless steel/316	1.3541/1.4401
12870	87	Plug	1	B8M	1.4401
12880	88	Spacer	1	316Ti	1.4571

LESER is free to upgrade materials without further notice.

Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				

LESER The-Safety-Valve.com	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	5 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project R.1
		Tag No:	610PSV600
		LESER Job N°	

Drawing

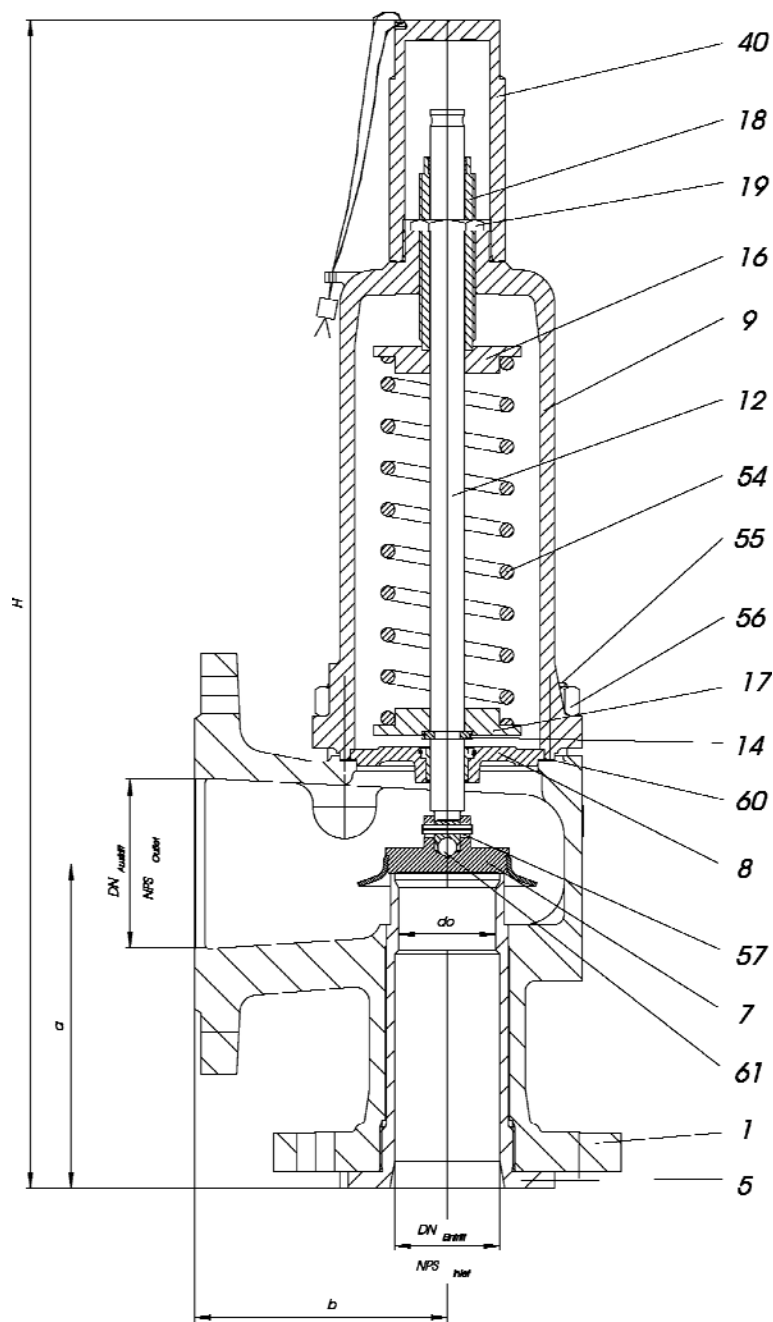


Drawing is a view; the effective geometry could deviate from this view.

Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				

LESER The-Safety-Valve.com	Sizing acc. to AD 2000:A2 / TRD 421 for Gas VALVESTAR® – v.7.3.1.60920	Page:	6 of 6
		Date:	2018-07-09 11:40:28
		Project:	NFRI18 #1 Project R.1
		Tag No:	610PSV600
		LESER Job N°	

Drawing



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Name	AD 2000-Merkblatt A2				
Date	2018-07-09 11:40:28				
Rev.No	1				