







OWNER:  شرکت سست و موی توستر ایرانیاان (سهایی نفاش)	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT		
	MC :  شرکت سست و موی توستر ایرانیاان (سهایی نفاش)	<b>CALCULATION &amp; DATA SHEET OF SAFETY VALVE FOR NITROGEN GAS BOOSTER</b>							
Owner Document Number: 17811-52A		Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445
	BU	20	VD	303	IN	DSH	0015	Rev.: 02	Page 1 of 15

## CALCULATION & DATA SHEET OF SAFETY VALVE FOR NITROGEN GAS BOOSTER


 شرکت سست و موی توستر ایرانیاان (سهایی نفاش)	 Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT
<b>Document Review</b>		
Issue Purpose:	AFC	
Result Code: AP,AN,CM,RE,NC	AN	
Next Status : IFC,IFA,IFI,AFC,AB	AFC	
Responsible Department	MECHANICAL	
Commented Date	May/30/2022	
<b>Approval or review hereunder shall not be construed to relieve Vendor / Subcontractor of his responsibilities and liability under the contract.</b>		

02	09/05/2022	Approved for Construction	TvT	KP	LdM	
01	27/10/2021	Approved for Construction	TvT	KP	LdM	
00	20/09/2021	For approval	TvT	KP	LdM	
Rev.	Date	Purpose of Issue	Prepared	Checked	Approved	AC Code
					Class: 1	Phase: P



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**Notes:**



				<b>INSTRUMENT AND VALVE DATASHEET Index</b> 	
02	TT	09/05/2022	Approve for construction		
01	TT	27/10/2021	Approve for construction		
00	TT	20/09/2021	For Approval		
Rev	By	Date	Description	Sheet	3 of 15
				Based on P&ID	Rev.03

GENERAL	1	Tag Number		PSV-10151	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		BU-20-VD-303-PR-WG-0013	
	4	Location		Compressor upstream After-cooler	
	5	Line/equip. No.		2"-NL-1002-539D(N)	
	6	Design / nozzle type		Safety / Full	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type /connection		Closed / bolted	
	9	Spring Cap /connection		Closed/ threaded	
PROCESS CONDITIONS	10	Fluid	State	Nitrogen	Dry Gas
	11	Pressure	Norm. Max.	15,5 Bar(a)	18 Bar(a)
	12	Temperature	Norm. Max.	160°C	170°C
	13	Design Press.	Temp.	26 Bar(a)	200°C
	14	Ambient Temp.	Min. Max.	5 °C	55 °C
BASIS AND SELECTION	15	Flow		707 Kg/hr / 565 Nm3/hr	
	16	Set Pressure		18 Bar(a) as per PID	18 bar(g)
	17	Molecular Weight	Oper. Sp. Gr.	28,97 kg/mol	1
	18	Back Pres. (bar(g))		0 bar(g)	
	19	Allowable Overpressure (%)		10 %	
	20	Compressibility Factor (Z)		1	
	21	Ratio of Specific Heat (Cp/Cv)		1.4	
	22	Operating Viscosity (cP)		-	
	23	Barometric Pressure		1,013	
	24	Max. Allowable Relief Pressure		20,813	
	25	Design Code		API 520, API 521, API 526	
	26	Size Basis		Blocked discharge	
	27	Calculated Area (sq.mm)		109	
	28	Selected Area (sq.mm)		153	
	CONNECTIONS	29	Orifice Designation		D
30					
31		Inlet Size	Outlet Size	1"	2"
32		Inlet Connection	Outlet Conn.	RF	RF
33		Inlet Rating	Outlet Rating	300#	150#
MATERIAL	34				
	35				
	36	Body and Bonnet		Carbon steel (SA-216 Gr. WCB)	
	37	Seat and Disc		SS 316	
	38	Guide and Rings		SS 316	
	39	Spring		Chrome Alloy	
	40	Nozzle		SS 316	
OPTIONS	41	Bonnet Bolt/nut		A193 B7 / A194 grade 2H	
	42				
	43	Lever: Plain or Packed		Plain	
CERTIFICATES	44	Test Gag		Yes	
	45				
	46				
	47				
CALCULATIONS	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
PURCHASE	51	Functional test		Yes	
	52	Sizing calculation		Yes	
	53				
	54				
	55	Manufacturer		Leser	
	56	Model		5262	
	57				

1. Discrepancy with PID; In PID 18 bara. Please clarify why the set pressure of the PSV is higher than the design pressure of the 1st stage compressor.

Size has discrepancy with PID please modify.

**NOTES :**

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				<b>Pressure Safety Valve</b>	
					
02	TT	09/05/2022	Approve for construction	 Sheet 4 of 15 Based on P&ID Rev.03	
01	TT	27/10/2021	Approve for construction		
00	TT	20/09/2021	For Approval		
Rev	By	Date	Description		



GENERAL	1	Tag Number		PSV-10152		
	2	Service		Pressure Safety Valve		
	3	P&ID No.		BU-20-VD-303-PR-WG-0013		
	4	Location		Compressor upstream After-cooler		
	5	Line/equip. No.		2"-NL-1003-539D(N)		
	6	Design / nozzle type		Safety / Full		
	7	Conv., Bellows, Pilot op.		Conventional type		
	8	Bonnet Type /connection		Closed / bolted		
	9	Spring Cap /connection		Closed/ threaded		
PROCESS CONDITIONS	10	Fluid	State	Nitrogen	Dry Gas	
	11	Pressure	Norm. Max.	23,5 Bar(a)	26 Bar(a)	
	12	Temperature	Norm. Max.	135°C	140°C	
	13	Design	Press. Temp.	26 Bar(a)	170°C	
	14	Ambient Temp.	Min. Max.	5 °C	55 °C	
BASIS AND SELECTION	15	Flow		707 Kg/hr / 565 Nm3/hr		
	16	Set Pressure		26 Bar(a) as per PID	→ 26 bar(g)	2. 52 °C
	17	Molecular Weight	Oper. Sp. Gr.	28,97 kg/mol	1	
	18	Back Pres. (bar(g))		0 bar(g)		
	19	Allowable Overpressure (%)		10 %		
	20	Compressibility Factor (Z)		1		
	21	Ratio of Specific Heat (Cp/Cv)		1.4		
	22	Operating Viscosity (cP)		-		
	23	Barometric Pressure		1,013		
	24	Max. Allowable Relief Pressure		29,613		
	25	Design Code		API 520, API 521, API 522		
	26	Size Basis		Blocked discharge		
	27	Calculated Area (sq.mm)		73		
	28	Selected Area (sq.mm)		153		
	29	Orifice Designation		D		
CONNECTIONS	30					
	31	Inlet Size	Outlet Size	1"	2"	
	32	Inlet Connection	Outlet Conn.	RF	RF	
	33	Inlet Rating	Outlet Rating	300#	150#	
	34					
MATERIAL	35					
	36	Body and Bonnet		Carbon steel (SA-216 Gr. WCB)		
	37	Seat and Disc		SS 316		
	38	Guide and Rings		SS 316		
	39	Spring		Chrome Alloy		
	40	Nozzle		SS 316		
	41	Bonnet Bolt/nut		A193 B7 / A194 grade 2H		
OPTIONS	42					
	43	Lever: Plain or Packed		Plain		
	44	Test Gag		Yes		
	45					
	46					
CERTIFICATES	47					
	48	3.1 Material certificate		Yes		
	49	Calibration certificate		Yes		
	50	Leakage test acc to API STD 527		Yes		
CALCULATIONS	51	Functional test		Yes		
	52	Sizing calculation		Yes		
	53					
PURCHASE	54					
	55	Manufacturer		Leser		
	56	Model		5262		
57						

3. Discrepancy with PID; In PID 26 bara. Please clarify why the set pressure of the PSV is higher than the design pressure of the 2nd compressor.

Size has discrepancy with PID please modify.

As per project spec. : All safety relief valves, shall have flanged inlet and outlet connections of 300 # RF and 150 # RF respectively

**NOTES :**

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				<b>Pressure Safety Valve</b>	
					
02	TT	09/05/2022	Approve for construction	 Sheet 5 of 15 Based on P&ID Rev.03	
01	TT	27/10/2021	Approve for construction		
00	TT	20/09/2021	For Approval		
Rev	By	Date	Description		

GENERAL	1	Tag Number		PSV-10153		
	2	Service		Pressure Safety Valve		
	3	P&ID No.		BU-20-VD-303-PR-WG-0013		
	4	Location		Compressor Cooling water outlet		
	5	Line/equip. No.		2"-CWR-1011		
	6	Design / nozzle type		Safety / Full		
	7	Conv., Bellows, Pilot op.		Conventional type		
	8	Bonnet Type /connection		Closed / bolted		
	9	Spring Cap /connection		Closed/ threaded		
PROCESS CONDITIONS	10	Fluid	State	Water	Liquid	
	11	Pressure	Norm. Max.	2,5 Bar(g)	3 Bar(g)	
	12	Temperature	Norm. Max.	45°C	55°C	
	13	Design	Press. Temp.	7 Bar(g)	100°C	
	14	Ambient Temp.	Min. Max.	5 °C	52 °C	
BASIS AND SELECTION	15	Flow		14,5 m3/hr		
	16	Set Pressure		3,5 bar(g)		
	17	Molecular Weight	Oper. Sp. Gr.	18,015 g/mol	1	
	18	Back Pres. (bar(g))		0 bar(g)		
	19	Allowable Overpressure (%)		10 %		
	20	Compressibility Factor (Z)		1		
	21	Ratio of Specific Heat (Cp/Cv)		1.4		
	22	Operating Viscosity (cP)		-		
	23	Barometric Pressure		1,013		
	24	Max. Allowable Relief Pressure		4,863		
	25	Design Code		API 520, API 521, API 526		
	26	Size Basis		Blocked discharge		
	27	Calculated Area (sq.mm)		250		
	28	Selected Area (sq.mm)		254		
	29	Orifice Designation		F		
CONNECTIONS	30					
	31	Inlet Size	Outlet Size	1 1/2"	2"	
	32	Inlet Connection	Outlet Conn.	RF	RF	
	33	Inlet Rating	Outlet Rating	150#	150#	
	34					
MATERIAL	35					
	36	Body and Bonnet		Carbon steel (SA-216 Gr. WCB)		
	37	Seat and Disc		SS 316		
	38	Guide and Rings		SS 316		
	39	Spring		Chrome Alloy		
	40	Nozzle		SS 316		
	41	Bonnet Bolt/nut		A193 B7 / A194 grade 2H		
OPTIONS	42					
	43	Lever: Plain or Packed		N/A		
	44	Test Gag		Yes		
	45					
	46					
CERTIFICATES	47					
	48	3.1 Material certificate		Yes		
	49	Calibration certificate		Yes		
	50	Leakage test acc to API STD 527		Yes		
CALCULATIONS	51	Functional test		Yes		
	52	Sizing calculation		Yes		
	53					
PURCHASE	54					
	55	Manufacturer		Leser		
	56	Model		5262		
57						

4. 500C(N)

2"-CWR-1011

501C(N)



First page and second page of calculation have some discrepancy, sizing calculation and data sheet shall be modified.

- Orifice designation F is not suitable for this condition and orifice G shall be used.  
 - Sizing has some discrepancy it shall be modified.

Size has discrepancy with PID please modify.

As per project spec. : All safety relief valves, shall have flanged inlet and outlet connections of 300 # RF and 150 # RF respectively

NOTES :

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				Pressure Safety Valve	
					
02	TT	09/05/2022	Approve for construction	 Sheet 6 of 15 Based on P&ID Rev.03	
01	TT	27/10/2021	Approve for construction		
00	TT	20/09/2021	For Approval		
Rev	By	Date	Description		

W _Ki The-Safety-Valve.com	Sizing acc. to API 520 for Gas VALVESTAR® - v.7.3.1.6 0 92 0	Pane:	lof6
		Date:	2022-04-22 09:21:51
		Project:	New project
		Tag No:	PSV-10151
		LESER Job NQ	

Sizing - Medium			
1000	Designation	Nitrogen	
1004	Formula	N2	
1001	Molar mass	M	28 kg/kmol
1002	Ratio of specific heats	k	1.400
1003	Compressibility factor	Z	1.000

Sizing - Service condition			
1100	Maximum allowable working pressure		
1101	Set pressure	p	18 bar-g
1102	Constant superimposed back pressure	paf	
2102	Variable superimposed back pressure		
1103	Built up back pressure	pae	
1104	Backpressure		
1105	Overpressure	dp	10.00 °A)
1106	Environmental pressure	pu	1.013 bar
1107	Relieving Temperature	T	170 °C
1111	Operating Temperature		170 °C
1108	Required massflow	qm,ab	707 kg/h
1109	Volume flow to be discharged (working condition)	qvb,ab	44.699 m³/h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14.7 psi]	qvn,ab	598.007 m³/h
1120	Rupture disc correction factor	Kc	1.000

18 Bar(a)  
as per PID

Initial Sizing according to API 520 for conventional safety valve		
1150	NPS inlet Orifice NPS outlet	1D2
1151	PR inlet x PR outlet	#300 x #150
1152	Material	WCB
1153	Required orifice	D
1154	Selected orifice	D

Sizing - Calculation			
1200	Certified massflow	qm,zu	991.671 kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	62.697 m³/h
1203	Certified volumeflow (standard condition)	qvn,zu	838.792 m³/h
1204	Maximum mass flow	qnn,max	1,101.857 kg/h
1205	Maximum volume flow (working condition)	qvb,max	69.663 m³/h
1206	Maximum volume flow (standard condition)	qvn,max	931.991 m³/h
1207	Capacity exceed		40.26 %

Name	AD 2000-Merkblatt A2			
Date	2022-04-22 09:21:51			
Rev.No	1			

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		Date:	2022-04-22 09:21:51
		Project:	New project
		Tag No:	PSV-10151
		LESER Job N9	

<b>Valve - General</b>			
1500	Article number		
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.455
1502	Certified coefficient of discharge for liquid	K,F	0.343
1453	Orifice		D
1505	Bonnet / Lifting device		Lifting device H4 (gastight)
1506	Body-/ Inlet base material		1.0619 / SA 216 WCB
1511	Bonnet		Closed Bonnet
1514	Order code		

<b>Inlet connection</b>			
1303	Connection standard		acc. to ASME B16.5
1304	DN / NPS		1"
1305	PN / PR		#300
1 306	Flange facing		RF

<b>Outlet connection</b>			
1353	Connection standard		acc. to ASME B16.5
1354	DN / NPS		2"
1355	PN / PR		#150
1 356	Flange facing		RF

<b>Valve - Dimensions</b>				
1400	Discharge area	Ao	153.938	m m <sup>2</sup>
1401	Discharge diameter	do	14	mm
1402	Centre to Face dimensions	a	105	mm
1 403	Centre to Face dimensions	b	114	mm
1405	Height	H	440	mm
1406	Weight	M	17.3	kg
1411	Inlet flange thickness incl. raised face	S1	30	mm

<b>Lift</b>		
1507	Standard	1.5 mm

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		Date:	2022-04-22 09:21:51
		Project:	New project
		Tag No:	PSV-10151
		LESER Job N9	

Valve - Calculation				
1200	Certified massflow	qm,zu	991.671	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	62.697	m <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qvn,zu	838.792	m <sup>3</sup> /h
1204	Maximum mass flow	qnn,max	1,101.857	kg/h
1205	Maximum volume flow (working condition)	qvb,max	69.663	m <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qvn,max	931.991	m <sup>3</sup> /h
1207	Capacity exceed		40.26	%
1 600	Required actual discharge area	Ao, req	1 09.74 8	mm <sup>2</sup>
1 601	Required discharge diameter	do,req	11.821	mm
1 61 7	Back pressure correction factor	Kb	1.0 00	
1 61 8	Cold differential test pressure	CDTP	1 8.1 74	bar-g
1 62 0	Cold differential test pressure, manually	CDTP		

Valve - Accessories	
J69	Lifting device H4: Test Gag

As per project spec. :  
All safety relief valves, shall  
have flanged inlet and outlet  
connections of 300 # RF and  
150 # RF respectively

Name	AD 2000-Merkblatt A2				
Date	2022-04-22 09:21:51				
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		Date:	2022-04-22 10:14:34
		Project:	New project
		Tag No:	PSV-10152
		LESER Job N9	

Sizing - Medium				
1000	Designation	Nitrogen		
1004	Formula	N2		
1001	Molar mass	M	28.97	kg/kmol
1002	Ratio of specific heats	k	1.400	
1003	Compressibility factor	Z	1.000	

Sizing - Service condition				
1100	Maximum allowable working pressure			
1101	Set pressure	p	26	bar-g
1102	Constant superimposed back pressure	paf		
2102	Variable superimposed back pressure			
1103	Built up back pressure	pae		
1104	Backpressure			
1105	Overpressure	dp	10.00	%
1106	Environmental pressure	pu	1.013	bar
1107	Relieving Temperature	T	140	°C
1111	Operating Temperature		140	°C
1108	Required massflow		707	kg/h
1109	Volume flow to be discharged (working condition)		28.309	m <sup>3</sup> /h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14.7 psi]	qvn,ab	577.984	m <sup>3</sup> /h
1120	Rupture disc correction factor	Kc	1.000	

26 Bar(a)  
as per PID

As per project spec. :  
All safety relief valves, shall  
have flanged inlet and outlet  
connections of 300 # RF and  
150 # RF respectively

Initial Sizing according to API 520 for conventional safety valve		
1150	NPS inlet Orifice NPS outlet	1D2
1151	PR inlet x PR outlet	#300 x #150
1152	Material	WCB
1153	Required orifice	D
1154	Selected orifice	D

Sizing - Calculation				
1200	Certified massflow	qm,zu	1,486.382	kg /h
1201	Certified volumeflow (operating condition)	qvb,zu	59.515	m <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qvn,zu	1,215.141	m <sup>3</sup> /h
1204	Maximum mass flow	qnn,max	1,651.536	kg/h
1205	Maximum volume flow (working condition)	qvb,max	66.128	m <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qvn,max	1,350.156	m <sup>3</sup> /h
1207	Capacity exceed		110.24	%

Name	AD 2000-Merkblatt A2			
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W   _____ _Ki The-Safety-Valve.com	Sizing acc. to API 5 2 0 for Gas VALVESTAR® - v.7.3.1.6 0 92 0	Page:	2of6
		Date:	2022-04-22 10:14:34
		Project:	New project
		Tag No:	PSV-10152
		LESER Job N9	

<b>Valve - General</b>			
1500	Article number		
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.455
1502	Certified coefficient of discharge for liquid	K,F	0.343
1453	Orifice		D
1505	Bonnet / Lifting device		Lifting device H4 (gastight)
1506	Body-/ Inlet base material		1.0619 / SA 216 WCB
1511	Bonnet		Closed Bonnet
1514	Order code		

<b>Inlet connection</b>			
1303	Connection standard		acc. to ASME B16.5
1304	DN / NPS		1"
1305	PN / PR		#300
1 306	Flange facing		RF

<b>Outlet connection</b>			
1353	Connection standard		acc. to ASME B16.5
1354	DN / NPS		2"
1355	PN / PR		#150
1 356	Flange facing		RF

<b>Valve - Dimensions</b>				
1400	Discharge area	Ao	153.938	m m <sup>2</sup>
1401	Discharge diameter	do	14	mm
1402	Centre to Face dimensions	a	105	mm
1 403	Centre to Face dimensions	b	114	mm
1405	Height	H	440	mm
1406	Weight	M	17.3	kg
1411	Inlet flange thickness incl. raised face	S1	30	mm

<b>Lift</b>		
1507	Standard	1.5 mm

Name	AD 2000-Merkblatt A2
Date	2022-04-22 10:14:34
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W 1 The-Safety-Valve.com _Ki	Sizing acc. to API 5 2 0 for Gas VALVESTAR ® - v.7.3.1.6 0 92 0	Page:	3of6
		Date:	2022-04-22 10:14:34
		Project:	New project
		Tag No:	PSV-10152
		LESER Job N9	

Valve - Calculation				
1200	Certified massflow	qm,zu	1,486.382	kg /h
1201	Certified volumeflow (operating condition)	qvb,zu	59.515	m <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qvn,zu	1,215.141	m <sup>3</sup> /h
1204	Maximum mass flow	qnn,max	1,651.536	kg/h
1205	Maximum volume flow (working condition)	qvb,max	66.128	m <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qvn,max	1,350.156	m <sup>3</sup> /h
1207	Capacity exceed		110.24	%
1 600	Required actual discharge area	Ao, req	73.221	mm <sup>2</sup>
1 601	Required discharge diameter	do,req	9.6 5 5	mm
1 61 7	Back pressure correction factor	Kb	1 .000	
1 61 8	Cold differential test pressure	CDTP	26.1 53	bar-g
1 62 0	Cold differential test pressure, manually	CDTP		

Valve - Accessories	
J69	Lifting device H4: Test Gag

Name	AD 2000-Merkblatt A2				
Date	2022-04-22 10:14:34				
Rev.No	1				

WI The-Safety-Valve.com	<b>Sizing acc. to API 520 for Liquid VALVESTAR® - v.7.3.1.60920</b>	Page:	lof6
		Date:	2022-04-22 10:27:07
		Project:	New project
		Tag No:	PSV - 10153
		LESER Job Ng	

<b>Sizing - Medium</b>			
1000	Designation	Water	
1004	Formula	H2O	
1005	Density	p	998 kg/m <sup>3</sup>
1006	Viscosity	p or el	

<b>Sizing - Service condition</b>			
1100	Maximum allowable working pressure		
1101	Set pressure	p	3.5 bar-g
1102	Constant superimposed back pressure	paf	
2102	Variable superimposed back pressure		
1103	Built up back pressure	paе	
1104	Backpressure		
1105	Overpressure	dp	10.00 Wo
1106	Environmental pressure	pu	1.013 bar
1107	Relieving Temperature	T	60 °C
1111	Operating Temperature		60 °C
1108	Required massflow	qm,ab	14,471 kg/h
1109	Volume flow to be discharged (working condition)	qv,ab	14.5 m <sup>3</sup> /h
1120	Rupture disc correction factor		000

First page and second page of calculation have some discrepancy, sizing calculation and data sheet shall be modified.

<b>Initial Sizing according to API 520 for conventional safety valve</b>			
1150	NPS inlet Orifice NPS outlet		1 1/2G3
1151	PR inlet x PR outlet		#150 x #150
1152	Material		WCB
1153	Required orifice		G
1154	Selected orifice		G

As per project spec. : All safety relief valves, shall have flanged inlet and outlet connections of 300 # RF and 150 # RF respectively

<b>Sizing - Calculation</b>			
1200	Certified massflow	qm,zu	14,699.259 kg/h
1201	Certified volume flow (operating condition)	qv,ab,zu	14.729 m <sup>3</sup> /h
1203	Certified volume flow (standard condition)	qvn,zu	
1204	Maximum mass flow	qm,max	16,332.51 kg/h
1205	Maximum volume flow (working condition)	qv,ab,max	16.365 m <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qvn,max	
1207	Capacity exceed		1.58 Wo

to be reviewed

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<b>Valve - General</b>			
1500	Article number		
1512	Reseller article number		
1513	Quantity of safety valve		1
1501	Certified coefficient of discharge for steam and gases	K,DG	0.801
1502	Certified coefficient of discharge for liquid	K,F	0.579
1453	Orifice		F
1505	Bonnet / Lifting device		Cap H2
1506	Body-/ Inlet base material		1.0619 / SA 216 WCB
1511	Bonnet		Closed Bonnet
1514	Order code		

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

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

<b>Valve - Dimensions</b>				
1400	Discharge area	Ao	254.469	mm <sup>2</sup>
1401	Discharge diameter	do	18	mm
1402	Centre to Face dimensions	a	124	mm
1403	Centre to Face dimensions	b	121	mm
1405	Height	H	536	mm
1406	Weight	M	30.6	kg
1411	Inlet flange thickness incl. raised face	S1	32	mm

<b>Lift</b>		
1507	Standard	5 mm

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<b>Valve - Calculation</b>				
1200	Certified massflow	qm,zu	14,699.259	kg/h
1201	Certified volumeflow (operating condition)	qvb,zu	14.729	m <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qvn,zu		
1204	Maximum mass flow	qnn,max	16,332.51	kg/h
1205	Maximum volume flow (working condition)	qvb,max	16.365	m <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qvn,max		
1207	Capacity exceed		1.58	%
1600	Required actual discharge area	Ao, req	250.517	mm <sup>2</sup>
1601	Required discharge diameter	do,req	17.86	mm
1618	Cold differential test pressure	CDTP	3.5	bar-g
1620	Cold differential test pressure, manually	CDTP		

<b>Valve - Accessories</b>	
J70	Lifting cap H2: Test Gag

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