

	LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT						
	PSV Data Sheets						
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**Airpack B.V. - Air Compressor –
Integrated Methanol and Ammonia Plant
17735-COM PSV Data Sheets (K020)**

Code 2
M.Dalakeh

05	08-05-2024	Issued for Approval	L.K.	J.J.	S.K.
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03	26-03-2024	Issued for Approval	L.K.	J.J.	S.K.
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REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

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PSV Data Sheets

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2	X	X	X	X	X	27						52						77					
3	X	X	X	X	X	28						53						78					
4	X	X	X	X	X	29						54						79					
5	X	X	X	X	X	30						55						80					
6	X	X	X	X	X	31						56						81					
7	X	X	X	X	X	32						57						82					
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Note

Rev	By	Date	Description	INSTRUMENT AND VALVE DATASHEET Index		Sheet 3 of 7	
05	LK	8-5-2024	Issue for Approval			Based on P&ID	Rev.07
04	LK	17-4-2024	Issue for Approval				
03	LK	26-3-2024	Issue for Approval				
02	LK	11-3-2024	Issue for Approval				
01	SK	8-11-2023	Issue for Approval				

General Comment:

- Cap screwed/bolted to be specified
- Lever Type (Packed/plain) to be specified too.

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				320PSV-8201		
				Pressure Safety Valve		
				278-VD-6019-PR-PID-0002		
GENERAL	3	P&ID NO.				
	4	Location		Package inlet		
	5	Line number		DAMPENER KV-020-001		
	6	Area classification		Safe area		
	7	Nozzle		Full nozzle		
	8	Design type		Safety		
	9	Conv., Bellows, Pilot op.		Conventional type		
	10	Bonnet Type		Closed		
	11	Bonnet connection		Bolted		
	PROCESS CONDITIONS	12	Fluid	State	Air	Vapor
		13	Pressure	Inlet Max.	9,5 bar(g)	12,5 bar(g)
14		Temperature	Norm. Max.	46 °C	-	
15		Design	Press. Temp.	12,5 bar(g)	75 °C	
16		Ambient Temp.	Min. Max.	-	-	
17		Flow		35 Nm ³ /hr		
BASIS AND SELECTION	18	Set Pressure		12,5 bar(g)		
	19	Molecular Weight	Oper. Sp. Gr.	-	-	
	20	Back Pres. (bar(g))		ATM		
	21	Allowable Overpressure (%)		10%		
	22	Compressibility Factor (Z)		1		
	23	Ratio of Sp. Ht.		-		
	24	Operating V		-		
	25	Barometric		1,013 bar(a)		
	26	Max. Allowable Relief Pressure		14,7 bar(a)		
	27	Design Code		API 520, 521, 526		
	28	Size Basis		Blocked discharge		
	29	Required discharge Area (sq.mm)		8,264 mm ²		
	30	Selected Area (sq.mm)		153,938 mm ²		
	31	Orifice Designation		D		
32	Noise level at 1m (from calculation)		101.74 dB			
CONNECTIONS	33	Blow-down		5-7%		
	34	Inlet Size	Outlet Size	1"	2"	
	35	Inlet Connection	Outlet Conn.	RF	RF	
	36	Inlet Rating	Outlet Rating	300#	150#	
MATERIAL	37					
	39	Body and Bonnet		SS316		
	40	Seat and Disc		SS316		
	41	Guide and Rings		CS		
	42	Spring		CS		
OPTIONS	43	Nozzle		SS316		
	44	Tag plate		SS316, Plate with steel wire		
	45	Test gag		Yes, with stamped tag number		
	46					
CERTIFICATES	47					
	48			Yes		
	49			Yes		
	50			Yes		
	51			No		
CALCULATIONS	52			Yes		
	53					
	54					
PURCHASE	55	Manufacturer		According to approved vendor list		
	56	Model		VTA		
	57					

As per API, "Selected Area" or "Effective Orifice Area" is 71 mm². please clarify

As per Nargan materials Dep, should be SS316


General comment: Shall be specified in this stage

According to approved vendor list
VTA

NOTES :

Vendor to confirm chosen materials are suitable for process conditions.


Commented Nargan material department should be implemented.

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Safety Valve	
					
05	LK	8-5-2024	Issue for Approval	Sheet	4 of 7
04	LK	17-4-2024	Issue for Approval	Based on P&ID Rev.07	
03	LK	26-3-2024	Issue for Approval		
02	LK	11-3-2024	Issue for Approval		
01	SK	8-11-2023	Issue for Approval		
Rev	By	Date	Description		

GENERAL	1	Tag Number		320PSV-8202	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		1st stage discharge	
	5	Line number		DAMPENER KV-020-002	
	6	Area classification		Safe area	
	7	Nozzle		Full nozzle	
	8	Design type		Safety	
	9	Conv., Bellows, Pilot op.		Conventional type	
	10	Bonnet Type		Closed	
	11	Bonnet connection		Bolted	
PROCESS CONDITIONS	12	Fluid	State	Air	Vapor
	13	Pressure	Inlet Max.	23,3 bar(g)	30,5 bar(g)
	14	Temperature	Norm. Max.	157 °C	-
	15	Design	Press. Temp.	30,5 bar(g)	175 °C
	16	Ambient Temp.	Min. Max.	-	-
	17	Flow		35 Nm ³ /hr	
BASIS AND SELECTION	18	Set Pressure		30,5 bar(g)	
	19	Molecular Weight	Oper. Sp. Gr.	-	-
	20	Back Pres. (bar(g))		ATM	
	21	Allowable Overpressure (%)		10%	
	22	Compressibility Factor (Z)		1	
	23	Ratio of Specific Heat (Cp/Cv)		-	
	24	Operating Viscosity (cP)		-	
	25	Barometric Pressure		1,013 bar(a)	
	26	Max. Allowable Relief Pressure		34,5 bar(a)	
	27	Design Code		API 520, 521, 526	
	28	Size Basis		Blocked discharge	
	29	Required discharge Area (sq.mm)		4,098 mm ²	
	30	Selected Area (sq.mm)		153,938 mm ²	
	31	Orifice Designation		D	
32	Noise level at 1m (from calculation)		113,4 dB		
33	Blow-down		5-7%		
CONNECTIONS	34	Inlet Size	Outlet Size	1"	2"
	35	Inlet Connection	Outlet Conn.	RF	RF
	36	Inlet Rating	As per Nargan materials Dep, should be SS316	600#	150#
MATERIAL	37	Body and Bonnet		SS316	
	38	Seat and Disc		SS316	
	39	Guide and Rings		CS	
	40	Spring		CS	
	41	Nozzle		SS316	
OPTIONS	44	Tag plate		SS316, Plate with steel wire	
	45	Test gag		Yes, with stamped tag number	
	46				
CERTIFICATES	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
	51	Functional test		No	
CALCULATIONS	52	Sizing calculation		Yes	
	53				
	54				
PURCHASE	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
57					

NOTES :


- Vendor to confirm chosen materials are suitable for process conditions.

05	LK	8-5-2024	Issue for Approval	INSTRUMENT AND VALVE DATASHEET Pressure Safety Valve 	Sheet 3 of 7 Based on P&ID Rev.07
04	LK	17-4-2024	Issue for Approval		
03	LK	26-3-2024	Issue for Approval		
02	LK	11-3-2024	Issue for Approval		
01	SK	8-11-2023	Issue for Approval		
Rev	By	Date	Description		

GENERAL	1	Tag Number		320PSV-8203	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		2nd stage discharge	
	5	Line number		DAMPENER KV-020-004	
	6	Area classification		Safe area	
	7	Nozzle		Full nozzle	
	8	Design type		Safety	
	9	Conv., Bellows, Pilot op.		Conventional type	
	10	Bonnet Type		Closed	
	11	Bonnet connection		Bolted	
PROCESS CONDITIONS	12	Fluid	State	Air	Vapor
	13	Pressure	Inlet Max.	30 bar (g)	39 bar(g)
	14	Temperature	Norm. Max.	116°C	-
	15	Design	Press. Temp.	39 bar (g)	135 °C
	16	Ambient Temp.	Min. Max.	-	-
	17	Flow		35 Nm ³ /hr	
BASIS AND SELECTION	18	Set Pressure		39 bar(g)	
	19	Molecular Weight	Oper. Sp. Gr.	-	-
	20	Back Pres. (bar(g))		ATM	
	21	Allowable Overpressure (%)		10%	
	22	Compressibility Factor (Z)		1	
	23	Ratio of Specific Heat (Cp/Cv)		-	
	24	Operating Viscosity (cP)		-	
	25	Barometric Pressure		1,013 bar(a)	
	26	Max. Allowable Relief Pressure		43,9 bar(a)	
	27	Design Code		API 520, 521, 526	
	28	Size Basis		Blocked discharge	
	29	Required discharge Area (sq.mm)		3,068 mm ²	
	30	Selected Area (sq.mm)		153,938 mm ²	
	31	Orifice Designation		D	
32	Noise level at 1m (from calculation)		113,36 dB		
33	Blow-down		5-7%		
CONNECTIONS	34	Inlet Size	Outlet Size	1"	2"
	35	Inlet Connection	Outlet Conn	RF	RF
	36	Inlet Rating		600#	150#
MATERIAL	37	Body and Bonnet		SS316	
	38	Seat and Disc		SS316	
	39	Guide and Rings		CS	
	40	Spring		CS	
	41	Nozzle		SS316	
	42				
OPTIONS	44	Tag plate		SS316, Plate with steel wire	
	45	Test gag		Yes, with stamped tag number	
	46				
CERTIFICATES	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
	51	Functional test		No	
CALCULATIONS	52	Sizing calculation		Yes	
	53				
	54				
PURCHASE	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
57					

As per Nargan materials Dep, should be SS316

NOTES :
 - Vendor to confirm chosen materials are suitable for process conditions.

05	LK	8-5-2024	Issue for Approval	INSTRUMENT AND VALVE DATASHEET Pressure Safety Valve 	Sheet 6 of 7 Based on P&ID Rev.07
04	LK	17-4-2024	Issue for Approval		
03	LK	26-3-2024	Issue for Approval		
02	LK	11-3-2024	Issue for Approval		
01	SK	8-11-2023	Issue for Approval		
Rev	By	Date	Description		


GENERAL	1	Tag Number		320PSV-8204	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Water system	
	5	Line number		3/4"-CWR-320-26-B24C-N	
	6	Area classification		Safe area	
	7	Nozzle		Full nozzle	
	8	Design type		Safety	
	9	Conv., Bellows, Pilot op.		Conventional type	
	10	Bonnet Type		Closed	
	11	Bonnet connection		Bolted	
PROCESS CONDITIONS	12	Fluid	State	Water	Liquid
	13	Pressure	Inlet Max.	4,4 bar(g)	
	14	Temperature	Norm. Max.		46 °C
	15	Design	Press. Temp.	7 bar(g)	75 °C
	16	Ambient Temp.	Min. Max.	-	-
TUBE RUPTURE CASE	17	Flow		1 Nm ³ /h	
	18	Fluid	State	Water/Air	Liquid/Gas
	19	Pressure	Temperature	max. 39 bar(g)	135 °C
	20	Flow on air side		35 Nm ³ /h	
BASIS AND SELECTION	21	Set Pressure		7 bar(g)	
	22	Molecular Weight	Oper. Sp. Gr.	-	-
	23	Back Pres. (bar(g))		ATM	
	24	Allowable Overpressure (%)		10%	
	25	Compressibility Factor (Z)		1	
	26	Ratio of Specific Heat (Cp/Cv)		-	
	27	Operating Viscosity (cP)		-	
	28	Barometric Pressure		1,013 bar(a)	
	29	Max. Allowable Working Pressure		8,7 bar(a)	
	30	Design Pressure		API 520, 521	
	31	Size Based on		Tube rupture & thermal expansion	
	32	Required discharge Area (sq.mm)		20,622 mm ²	
	33	Selected Area (sq.mm)		153,938 mm ²	
	34	Orifice Designation		D	
	35	Noise level at 1m (from calculation)		97,85 dB	
CONNECTIONS	36	Blow-down		10-20%	
	37	Inlet Size	Outlet Size	3/4"	VTA
	38	Inlet Connection	Outlet Conn.	RF	RF
	39	Inlet Rating	Outlet Rating	150#	VTA
MATERIAL	40	Body and Bonnet		CS	
	41	Seat and Disc		SS316	
	42	Guide and Ring		CS	
	43	Spring		CS	
	44	Nozzle		SS316	
OPTIONS	45				
	46	Tag plate		SS316, Plate with steel wire	
CERTIFICATES	47	Test gag		Yes, with stamped tag number	
	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
CALCULATIONS	51	Functional test		No	
	52	Sizing calculation		Yes	
	53				
PURCHASE	54				
	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
	57				

NOTES :
 - Vendor to confirm chosen materials are suitable for process conditions.

As per spec of project, minimum rating should be considered 300#

As per Nargan materials Dep, should be SS316

As per project specification, Thermal relief valves shall be 3/4x1 NPT, 6000#

05	LK	8-5-2024	Issue for Approval	INSTRUMENT AND VALVE DATASHEET Pressure Safety Valve 	Sheet 7 of 7 Based on P&ID Rev.07
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02	LK	11-3-2024	Issue for Approval		
01	SK	8-11-2023	Issue for Approval		
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