Airpack B.V. - Air Compressor –

Integrated Methanol and Ammonia Plant

17735-COM PSV Data Sheets (K020)

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
01	08-11-2023	Issued for Approval	S.K.	J.J.	S.K.

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01	SK	8-11-2023	Issue for Approval

INSTRUMENT AND VALVE DATASHEET
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Airpack Netherlands

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GENERAL	1	Tag Number			320-PSV-8201		
	2	Service			Pressure Safety Valve		
	3	P&ID No.			17735-03		
	4	Location			Package inlet		
	5	Nozzle			semi nozzle		
	6	Design type			Safety		
	7	Conv., Bellows, Pilot op.			Conventional type		
	8	Bonnet Type			Closed		
	9	Bonnet connection			Screwed / Bolted		
PROCESS CONDITIONS	10	Fluid	State		Air		Vapor
	11	Pressure	Inlet	Max.	9,5 bar(g)		12,5 bar(g)
	12	Temperature	Norm.	Max.	46 °C		-
	13	Design	Press.	Temp.	12,5		75 °C
	14	Ambient Temp.	Min.	Max.	-		-
	15	Flow			35 Nm³/hr		
BASIS AND SELECTION	16	Set Pressure			12,5 bar(g)		
	17	Molecular Weight	Oper. Sp. Gr.		-		-
	18	Back Pres. (bar(g))			ATM		
	19	Allowable Overpressure (%)			-		
	20	Compressibility Factor (Z)			1		
	21	Ratio of Specific Heat (Cp/Cv)			-		
	22	Operating Viscosity (cP)			-		
	23	Barometric Pressure			1,013		
	24	Max. Allowable Relief Pressure			14,763		
	25	Design Code			API 520 / 521		
	26	Size Basis			Blocked discharge		
	27	Required discharge Area (sq.mm)			VTA		
	28	Selected Area (sq.mm)			VTA		
	29	Orifice Designation			VTA		
	30						
CONNECTIONS	31	Inlet Size	Outlet Size		3/4"		VTA
	32	Inlet Connection	Outlet Conn.		RF		RF
	33	Inlet Rating	Outlet Rating		300#		VTA
	34						
	35						
MATERIAL	36	Body and Bonnet			CS		
	37	Seat and Disc			VTA		
	38	Guide and Rings			CS		
	39	Spring			CS		
	40	Nozzle			VTA		
	41						
	42						
OPTIONS	43						
	44						
	45						
	46						
	47						
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			No		
	53						
	54						
PURCHASE	55	Manufacturer			According to approved vendor list		
	56	Model			VTA		
	57						

NOTES :

GENERAL	1	Tag Number			320-PSV-8202		
	2	Service			Pressure Safety Valve		
	3	P&ID No.			17735-03		
	4	Location			1st stage discharge		
	5	Nozzle			semi nozzle		
	6	Design type			Safety		
	7	Conv., Bellows, Pilot op.			Conventional type		
	8	Bonnet Type			Closed		
	9	Bonnet connection			Screwed / Bolted		
PROCESS CONDITIONS	10	Fluid	State		Air		Vapor
	11	Pressure	Inlet	Max.	23,3		30,5 bar(g)
	12	Temperature	Norm.	Max.	157 °C		-
	13	Design	Press.	Temp.	30,5		175 °C
	14	Ambient Temp.	Min.	Max.	-		-
	15	Flow					
BASIS AND SELECTION	16	Set Pressure			30,5 bar(g)		
	17	Molecular Weight	Oper. Sp. Gr.		-		-
	18	Back Pres. (bar(g))			ATM		
	19	Allowable Overpressure (%)			-		
	20	Compressibility Factor (Z)			1		
	21	Ratio of Specific Heat (Cp/Cv)			-		
	22	Operating Viscosity (cP)			-		
	23	Barometric Pressure			1,013		
	24	Max. Allowable Relief Pressure			28,513		
	25	Design Code			API 520 / 521		
	26	Size Basis			Blocked discharge		
	27	Required discharge Area (sq.mm)			VTA		
	28	Selected Area (sq.mm)			VTA		
	29	Orifice Designation			VTA		
	30						
CONNECTIONS	31	Inlet Size	Outlet Size		3/4"		VTA
	32	Inlet Connection	Outlet Conn.		RF		RF
	33	Inlet Rating	Outlet Rating		300#		VTA
	34						
	35						
MATERIAL	36	Body and Bonnet			CS		
	37	Seat and Disc			VTA		
	38	Guide and Rings			CS		
	39	Spring			CS		
	40	Nozzle			VTA		
	41						
	42						
OPTIONS	43						
	44						
	45						
	46						
	47						
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			No		
	53						
	54						
PURCHASE	55	Manufacturer			According to approved vendor list		
	56	Model			VTA		
	57						

NOTES :

GENERAL	1	Tag Number			320-PSV-8203		
	2	Service			Pressure Safety Valve		
	3	P&ID No.			17735-03		
	4	Location			2nd stage discharge		
	5	Nozzle			semi nozzle		
	6	Design type			Safety		
	7	Conv., Bellows, Pilot op.			Conventional type		
	8	Bonnet Type			Closed		
	9	Bonnet connection			Screwed / Bolted		
PROCESS CONDITIONS	10	Fluid	State		Air		Vapor
	11	Pressure	Inlet	Max.	30 bar (g)		39,0 bar(g)
	12	Temperature	Norm.	Max.	116°C		-
	13	Design	Press.	Temp.	39 bar (g)		135 °C
	14	Ambient Temp.	Min.	Max.	-		-
	15	Flow					
BASIS AND SELECTION	16	Set Pressure			39,0 bar(g)		
	17	Molecular Weight	Oper. Sp. Gr.		-		-
	18	Back Pres. (bar(g))			ATM		
	19	Allowable Overpressure (%)			-		
	20	Compressibility Factor (Z)			1		
	21	Ratio of Specific Heat (Cp/Cv)			-		
	22	Operating Viscosity (cP)			-		
	23	Barometric Pressure			1,013		
	24	Max. Allowable Relief Pressure			38,413		
	25	Design Code			API 520 / 521		
	26	Size Basis			Blocked discharge		
	27	Required discharge Area (sq.mm)			VTA		
	28	Selected Area (sq.mm)			VTA		
	29	Orifice Designation			VTA		
	30						
CONNECTIONS	31	Inlet Size	Outlet Size		3/4"		VTA
	32	Inlet Connection	Outlet Conn.		RF		RF
	33	Inlet Rating	Outlet Rating		300#		VTA
	34						
	35						
MATERIAL	36	Body and Bonnet			CS		
	37	Seat and Disc			VTA		
	38	Guide and Rings			CS		
	39	Spring			CS		
	40	Nozzle			VTA		
	41						
	42						
OPTIONS	43						
	44						
	45						
	46						
	47						
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			No		
	53						
	54						
PURCHASE	55	Manufacturer			According to approved vendor list		
	56	Model			VTA		
	57						

NOTES :

GENERAL	1	Tag Number			320-PSV-8204		
	2	Service			Pressure Safety Valve		
	3	P&ID No.			17735-03		
	4	Location			Water system		
	5	Nozzle			semi nozzle		
	6	Design type			Safety		
	7	Conv., Bellows, Pilot op.			Conventional type		
	8	Bonnet Type			Closed		
	9	Bonnet connection			Screwed / Bolted		
PROCESS CONDITIONS	10	Fluid	State		Water		Liquid
	11	Pressure	Inlet	Max.	4,5 bar(g)		4,5 bar(g)
	12	Temperature	Norm.	Max.	36°C		46 °C
	13	Design	Press.	Temp.	4,5		125 °C
	14	Ambient Temp.	Min.	Max.	-		-
	15	Flow					
BASIS AND SELECTION	16	Set Pressure			7,0 bar(g)		
	17	Molecular Weight	Oper. Sp. Gr.		-		-
	18	Back Pres. (bar(g))			ATM		
	19	Allowable Overpressure (%)			-		
	20	Compressibility Factor (Z)			1		
	21	Ratio of Specific Heat (Cp/Cv)			-		
	22	Operating Viscosity (cP)			-		
	23	Barometric Pressure			1,013		
	24	Max. Allowable Relief Pressure			8,713		
	25	Design Code			API 520 / 521		
	26	Size Basis			Blocked discharge		
	27	Required discharge Area (sq.mm)			VTA		
	28	Selected Area (sq.mm)			VTA		
	29	Orifice Designation			VTA		
	30						
CONNECTIONS	31	Inlet Size	Outlet Size		3/4"		VTA
	32	Inlet Connection	Outlet Conn.		RF		RF
	33	Inlet Rating	Outlet Rating		150#		VTA
	34						
	35						
MATERIAL	36	Body and Bonnet			CS		
	37	Seat and Disc			VTA		
	38	Guide and Rings			CS		
	39	Spring			CS		
	40	Nozzle			VTA		
	41						
	42						
OPTIONS	43						
	44						
	45						
	46						
	47						
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			No		
	53						
	54						
PURCHASE	55	Manufacturer			According to approved vendor list		
	56	Model			VTA		
	57						

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Safety Valve	
				Airpack Netherlands	
01	SK	8-11-2023	Issue for Approval		Sheet 5 of 7
Rev	By	Date	Description		Based on P&ID Rev.00