

 JOKWANG I.L.I <small>Since 1968</small>			Pressure Safety & Relief Valve Specification and Calculation Sheet							
			Sheet No.		9 of 11		Rev . No		1	
			Project Name		Yeosu No.2 Complex Project(R2) 2nd PO					
			Project No.							
			Date		2021-01-22		By		S.W.PARK	
		Checked		M.J.LEE		Approved		J.H.LEEM		
GENERAL	P&ID No.	1	H530-R2-PID-3040							
	Tag No.	2	R2-PSV-3406/3407							
	Service Line	3	C-301A/B CYLINDER							
	Model No.	4	JSV-FF100		<div>Calculation</div>					
	Quantity	5	2							
TYPE	Nozzle Type	6	Full Nozzle		Calculation of Area					
	Design Type	7	Conventional		$A1 = 11.78 * W1 * (\sqrt{G} / (P1 - Pb)) / (Kd * Kb * Kc * Kv)$ $= 11.78 * 0.016667 * \sqrt{(0.969 / (1131.9 - 9)) / (0.615 * 1 * 1 * 0.556)}$ $= \underline{0.016867} \text{ mm}^2$					
	Bonnet Type	8	Close							
	Lever Type	9	None							
	Cap Type	10	Screwed							
CONN.	Size. Inlet / Outlet	11	3/4"X1"							
	Inlet. Rating / Facing	12	ASME CL.150 RF							
	Outlet. Rating / Facing	13	ASME CL.150 RF							
MATERIALS	Body (Base)	14	SA216 WCB		Calculation of Capacity					
	Bonnet	15	SA216 WCB							
	Seat	16	316 SS-st.		$W = A * Kd * Kb * Kc * Kv / (11.78 * \sqrt{G} / (P1 - Pb))$ $= 132.9 * 0.615 * 1 * 1 * 0.556 / (11.78 * \sqrt{(0.969 / (1131.9 - 9))})$ $= 131.30 \text{ l/min}$ $= \underline{7.9} \text{ m3/h}$					
	Disc	17	316 SS-st.							
	Guide	18	316 SS							
	Gasket (Bonnet)	19	PTFE							
	Spring	20	316 SS							
	Bellows	21	None							
BASIS	Approved by	22	UV STAMP		<div> <div>W</div> <div>Valve Capacity</div> <div>131.30 l/min</div> </div> <div> <div>W1</div> <div>Required Capacity</div> <div>0.016667 l/min</div> </div> <div> <div>P</div> <div>Set Pressure</div> <div>1029 KPag</div> </div> <div> <div>A1</div> <div>Calculated Area</div> <div>0.016867 mm²</div> </div> <div> <div>A</div> <div>Selected Area</div> <div>132.9 mm²</div> </div> <div> <div>Kd</div> <div>Coefficient of Discharge</div> <div>0.615</div> </div> <div> <div>G</div> <div>Specific Gravity</div> <div>0.969</div> </div> <div> <div>Pb</div> <div>Back Pressure</div> <div>9 KPag</div> </div> <div> <div>Kb</div> <div>Correction Factor Due to Back Pressure</div> <div>1</div> </div> <div> <div>Kc</div> <div>Correction Factor for a rupture disk</div> <div>1</div> </div> <div> <div>Kv</div> <div>Correction Factor due to Viscosity</div> <div>0.556</div> </div> <div> <div>P1</div> <div>Set Pressure plus Overpressure</div> <div>1131.9 KPag</div> </div>					
	Comply with NACE	23	No							
	EN 10204	24	No							
	Code	25	API RP 520-Certification							
	Fire	26	No							
	Sizing Basis	27	Thermal Expansion							
	Rupture Disk	28	No							
SERVICE CONDITION	Fluid / State	29	CW / LIQUID							
	Mol. Weight / Specific Gravity	30	0.969							
	Compressibility Factor	31	-							
	Ratio of Specific Heat	32	-							
	Viscosity	33	0.331 cP							
	Operating / Relieving Temp.	34	35 / 85.7 °C							
	Design Min. / Design Max. Temp.	35	65 °C							
	Operating / Set Pressure	36	0.539 / 1.029 MPag							
	Design Pressure / C.D.T.P	37	1.029 / 1.029 MPag							
	Back Pressure	Superimposed - Constant	38	- MPag						
		Superimposed - Variable	39	- MPag						
		Built-up	40	0.009 MPag						
		Total	41	0.009 MPag						
	Allowable Overpressure	42	10 %							
	Closing Pressure / Blowdown(%)	43	Min. 0.87465 MPag / 14.9999%							
SIZING & SELECTION	Required Capacity	44	0.001 m3/h		<div>Remarks</div> <div> <div>*Remark</div> <div>- Operating Pressure : 5.5 kg/cm²g</div> <div>- Setting Pressure : 10.5 kg/cm²g</div> <div>- Design Pressure : 10.5 kg/cm²g</div> <div>- Built-up Back Pressure : 0.1 kg/cm²g</div> <div>- Required Capacity : 0.969 kg/h</div> <div>- Valve Capacity : 775.2 kg/h</div> </div>					
	Valve Actual Capacity	45	7.9 m3/h							
	Calculated Orifice Area	46	0.016867 mm ²							
	Selected Orifice Area	47	132.9 mm ²							
	Orifice Dia.(mm)	48	D1(13)							
ETC	Paint System & Color	49	See Remark							
	Test Gag	50	Yes							
	Bug screen	51	No							