

 JOKWANG I.L.I		Pressure Safety & Relief Valve Specification and Calculation Sheet					
		Sheet No.	1 of 1	Rev. No	0		
		Project Name					
		Project No.					
		Date	2019-09-16	By	JUNGBAE.CHO		
		Checked	S.C.KIM	Approved	S.C.KIM		
GENERAL	P&ID No.	1					
	Tag No.	2					
	Service Line	3					
	Model No.	4	JSV-LT12				
	Quantity	5	1				
TYPE	Nozzle Type	6	Full Nozzle				
	Design Type	7	Conventional				
	Bonnet Type	8	Close				
	Lever Type	9	Plain Lever				
	Cap Type	10	Plain				
CONN.	Size. Inlet / Outlet	11	015X020				
	Inlet. Rating / Facing	12	JIS PT				
	Outlet. Rating / Facing	13	JIS PT				
MATERIALS	Body (Base)	14	C3771				
	Bonnet	15	B62 C83600 or BC6(CAC406)				
	Seat	16	B124 C37700 or C3771				
	Disc	17	Brass				
	Guide	18	-				
	Gasket (Bonnet)	19	-				
	Spring	20	Chrome Alloy(SWOSC-B)				
	Bellows	21	-				
BASIS	Approved by	22	-				
	Comply with NACE	23	No				
	EN 10204	24	Type 3.1				
	Code	25	KS B 6216				
	Fire	26	No				
	Sizing Basis	27	-				
	Rupture Disk	28	No				
SERVICE CONDITION	Fluid / State	29	Air / AIR				
	Mol. Weight / Specific Gravity	30	28.96				
	Compressibility Factor	31	1				
	Ratio of Specific Heat	32	1.4				
	Viscosity	33	-				
	Operating / Relieving Temp.	34	/ 20 °C				
	Design Min. / Design Max. Temp.	35	- °C				
	Operating / Set Pressure	36	/ 10 Kgf/cm ² g				
	Design Pressure / C.D.T.P	37	- / 10 Kgf/cm ² g				
	Back Pressure	Superimposed - Constant	38	- Kgf/cm ² g			
		Superimposed - Variable	39	- Kgf/cm ² g			
		Built-up	40	- Kgf/cm ² g			
		Total	41	0 Kgf/cm ² g			
	Allowable Overpressure	42	10 %				
Closing Pressure / Blowdown(%)	43	Min. 9 Kgf/cm ² g / 10%					
SIZING & SELECTION	Required Capacity	44	0 kg/h				
	Valve Actual Capacity	45	543 kg/h				
	Calculated Orifice Area	46	0 mm ²				
	Selected Orifice Area	47	62.832 mm ²				
	Orifice Dia.(mm)	48	D1(20)				
ETC	Paint System & Color	49	None				
	Test Gag	50	None				
	Bug screen	51	No				
Calculation							
Calculation of Area							
$A1 = W1 / (C * Kd * (P * 1.1 + 1) * \sqrt{(M/ZT)}) * 0.9$ $= 0 / (2.65 * 0.96 * (10 * 1.1 + 1) * \sqrt{(28.96 / (1 * 293))}) * 0.9$ $= \underline{0} \text{ mm}^2$							
Calculation of Capacity							
$W = C * Kd * A * (P * 1.1 + 1) * \sqrt{(M/ZT)} * 0.9$ $= 2.65 * 0.96 * 62.832 * (10 * 1.1 + 1) * \sqrt{(28.96 / (1 * 293))} * 0.9$ $= \underline{543} \text{ kg/h}$							
W	Valve Capacity				543 kg/h		
W1	Required Capacity				0 kg/h		
P	Set Pressure				10 Kgf/cm ² g		
A1	Calculated Area				0 mm ²		
A	Selected Area				62.832 mm ²		
Kd	Coefficient of Discharge				0.96		
C	Coefficient base on Ratio of Specific Heat				2.65		
T	Kelvin Temperature				293 K		
M	Molecular Weight				28.96		
Z	Compressibility Factor				1		
Remarks							