



JOKWANG I.L.I CO.,LTD.

**DATA SHEETS
FOR
QUOTATION**

PRESSURE SAFETY & RELIEF VALVE SPECIFICATIONS

Doc.No. : 161006-050

PROJECT NAME:

PROJECT NO. :
(HULL NO)

CLIENT :

SITE :

Head Office & Plant

#37, Sanmakgongdanbuk 10-gil, Yangsan-si, Gyeongsangnam-do, Korea

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0	2016. 10. 06.	Quotation	J.B SO	S.C.KIM	S.C.KIM		
REV.	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D	APP'D	DATE
						CLIENT	



Pressure Reducing Valve Specifications

Sheet No.	1 of 3	Rev.No.	0
Project Name			
Project No.			
Date	2016. 10. 06.	By	J.B SO
Checked	S.C.KIM	Approved	S.C.KIM

Tag No.		
Service		
Q'ty		4
Service Condition	Fluid	Air
	Inlet Pressure Nor. / Max	barg 30 /
	Out Pressure	barg 10
	Required Capacity	Nm3/h
Reducing Valve Specifications	Model	JRV-SF31
	Type	Direct Acting Piston
	Size Inlet / Outlet	015X015 A
	Connection	JIS B 2220 30K RF
	Design Pressure	barg 30
	Cv Value	1
	Design Temperature	℃ 80
	Valve Capacity	Nm3/h 406
	Adjust Range	barg 5~15
	Painting Color	Silver
	Hydrostatic Test	barg 45
Material	Body	SC 480
	Seat	SCS 13
	Disc	FPM
	O-ring	NBR
Remark		



Pressure Safety & Relief Valve Specifications

Sheet No.	2 of 3	Rev.No.	0
Project Name			
Project No.			
Date	2016. 10. 06.	By	J.B SO
Checked	S.C.KIM	Approved	S.C.KIM

GENERAL	P&ID No.	1	
	Tag No.	2	
	Service Line	3	
	Number Required	4	7
	Nozzle Type, Full or Semi	5	Full Nozzle
	Design Type	6	Conventional
	A. Conventional or Bellows		High Lift Type
	B. Full Bore, Low or High Lift		
Bonnet Type. Open or Close	7	Close	
CONNECTION	Size. Inlet / Outlet	8	1/2"X3/4"
	Inlet. Rating / Facing	9	ANSI NPT
	Outlet. Rating / Facing	10	ANSI NPT
MATERIALS	Body	11	A276 304(STELLITED)
	Bonnet	12	B62 C83600
	Seat	13	A 276 304(STELLITED)
	Disc	14	A 276 304(STELLITED)
	Guide	15	-
	Gasket	16	PTFE
	Spring	17	SWOSC
	Bellows	18	
ACCESSORY	Cap. Type	19	Plain
	Lever. Plain or Packed	20	Plain Lever
	Test Gag	21	No
	Paint Color	22	None
BASIC	Code	23	API RP 520
	Fire	24	No
	Sizing Basis	25	NA
SERVICE	Fluid and State	26	Air
	Required Capacity	27	kg/h
	Mol. Weight or Specific Gravity	28	28.96
	Viscosity	29	
	Operating / Set Pressure	30	15 barg
	Operating / Blowout Temp	31	/ 220 °C
	Constant Back Pressure	32	- barg
	Variable Back Pressure	33	- barg
	Built-up Back Pressure	34	- barg
	Total Back Pressure	35	- barg
	Closing Pressure	36	Min. 13.5 barg
	Hydrostatic Test	37	22.5 barg
	Allowable Overpressure	38	10 %
	Compressibility Factor	39	1
Ratio of Specific Heat	40	1.4	
ORIFICE	Calculated Area	41	0.00 mm ²
	Selected Area	42	35.186 mm ²
	Orifice Dia.(mm)	43	14
	Valve Capacity	44	394 kg/h
	Model No.	45	JSV-HT41
Cert.	Approved by	46	/

CALCULATION

* Calculation of Area

$$A1 = 13160 * W1 * (\sqrt{ZT/M}) / (C * Kd * (P * 1.1 + 101.325) * Kb * Kc)$$

$$= 13160 * 0 * (\sqrt{1 * 493 / 28.96}) / (356.06 * 0.975 * (1500 * 1.1 + 101.325) * 1 * 1)$$

$$= \underline{0.00} \text{ mm}^2$$

* Calculation of Capacity

$$W = A * C * Kd * (P * 1.1 + 101.325) * Kb * Kc / (13160 * \sqrt{ZT/M})$$

$$= 35.186 * 356.06 * 0.975 * (1500 * 1.1 + 101.325) * 1 * 1 / (13160 * \sqrt{1 * 493 / 28.96})$$

$$= \underline{394} \text{ kg/h}$$

W = Valve Capacity	394.00 kg/h
W1 = Required Capacity	0.00 kg/h
P = Set Pressure	1500 Kpag
A1 = Calculated Area	0.00 mm ²
A = Selected Area	35.186 mm ²
Kd = Coefficient of Discharge	0.975
C = Coefficient base on Ratio of Specific Heat	356.060
T = Kelvin Temperature.....	493
M = Molecular Weight.....	28.96
Z = Compressibility Factor.....	1
Kb = Correction Factor Due to Back Pressure..	1
Kc = Correction Factor for a rupture disk.....	1

Remark

*CDTP : 15 barg



Pressure Safety & Relief Valve Specifications

Sheet No.	3 of 3	Rev.No.	0
Project Name			
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Checked	S.C.KIM	Approved	S.C.KIM

GENERAL	P&ID No.	1	
	Tag No.	2	
	Service Line	3	
	Number Required	4	5
	Nozzle Type, Full or Semi	5	Full Nozzle
	Design Type	6	Conventional
	A. Conventional or Bellows		High Lift Type
	B. Full Bore, Low or High Lift		
Bonnet Type. Open or Close	7	Close	
CONNECTION	Size. Inlet / Outlet	8	1/2"X3/4"
	Inlet. Rating / Facing	9	ANSI NPT
	Outlet. Rating / Facing	10	ANSI NPT
MATERIALS	Body	11	A276 304
	Bonnet	12	A351 CF8
	Seat	13	A 276 304(STELLITED)
	Disc	14	A 276 304(STELLITED)
	Guide	15	-
	Gasket	16	PTFE
	Spring	17	SWOSC
	Bellows	18	
ACCESSORY	Cap. Type	19	Plained
	Lever. Plain or Packed	20	Plain Lever
	Test Gag	21	No
	Paint Color	22	None
BASIC	Code	23	API RP 520
	Fire	24	No
	Sizing Basis	25	
SERVICE	Fluid and State	26	AIR
	Required Capacity	27	kg/h
	Mol. Weight or Specific Gravity	28	28.96
	Viscosity	29	
	Operating / Set Pressure	30	33.64 barg
	Operating / Blowout Temp	31	/ 220 °C
	Constant Back Pressure	32	- barg
	Variable Back Pressure	33	- barg
	Built-up Back Pressure	34	- barg
	Total Back Pressure	35	- barg
	Closing Pressure	36	Min. 30.28 barg
	Hydrostatic Test	37	50.46 barg
	Allowable Overpressure	38	10 %
	Compressibility Factor	39	1
Ratio of Specific Heat	40	1.4	
ORIFICE	Calculated Area	41	0.00 mm ²
	Selected Area	42	19.792 mm ²
	Orifice Dia. (mm)	43	10.5
	Valve Capacity	44	481 kg/h
	Model No.	45	JSV-HT51
Cert.	Approved by	46	/

CALCULATION

* Calculation of Area

$$\begin{aligned}
 A1 &= 13160 * W1 * (\sqrt{ZT/M}) / (C * Kd * (P * 1.1 + 101.325) * Kb * Kc) \\
 &= 13160 * 0 * (\sqrt{1 * 493 / 28.96}) / (356.06 * 0.975 * (3364 * 1.1 + 101.325) * 1 * 1) \\
 &= \mathbf{0.00 \text{ mm}^2}
 \end{aligned}$$

* Calculation of Capacity

$$\begin{aligned}
 W &= A * C * Kd * (P * 1.1 + 101.325) * Kb * Kc / (13160 * \sqrt{ZT/M}) \\
 &= 19.792 * 356.06 * 0.975 * (3364 * 1.1 + 101.325) * 1 * 1 / (13160 * \sqrt{1 * 493 / 28.96}) \\
 &= \mathbf{481 \text{ kg/h}}
 \end{aligned}$$

W = Valve Capacity	481.00 kg/h
W1 = Required Capacity	0.00 kg/h
P = Set Pressure	3364 Kpag
A1 = Calculated Area	0.00 mm ²
A = Selected Area	19.792 mm ²
Kd = Coefficient of Discharge	0.975
C = Coefficient base on Ratio of Specific Heat	356.060
T = Kelvin Temperature.....	493
M = Molecular Weight.....	28.96
Z = Compressibility Factor.....	1
Kb = Correction Factor Due to Back Pressure..	1
Kc = Correction Factor for a rupture disk.....	1

Remark

*CDTP : 33.64 barg