

OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT ISLAMABAD
FOREIGN SECTION C

3708
 (To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

Material: PRESSURE SAFETY VALVES FOR DAKHNI GAS PLANT.

Tender Enquiry No: PROC-FC/CB/P&P/DKN-5266/2022

Due Date: _____

Evaluation Criteria: FULL

SCHEDULE OF REQUIREMENT

Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	Pressure Safety Valve Tag No. 120-PSV-03, Model 2G3JOS-E65A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent in fit, form & functionality (as per attached DATA sheet and TOR)	Number	1					
2	Pressure Safety Valve Tag No. 120-PSV-04, Model 2G3JOS-E65A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent in fit, form & functionality (as per attached DATA sheet and TOR)	Number	1					
3	Pressure Safety Valve Tag No. 30-PSV-01, Model 2H3JOS-E45E-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent in fit, form & functionality (as per attached DATA sheet and TOR)	Number	1					
4	Pressure Safety Valve Tag No. 30-PSV-03, Model 1D2JOS-E45E-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent in fit, form & functionality (as per attached DATA sheet and TOR)	Number	1					
5	Pressure Safety Valve Tag No. 30-PSV-05, Model 1.5D2JOS-E36RE-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
6	Pressure Safety Valve Tag No. 30-PSV-01, Model 1.5F2JBS-E16E-SPL, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
7	Pressure Safety Valve Tag No. 40-PSV-01/02, Model 8T10JBS-E45C6E, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
8	Pressure Safety Valve Tag No. 40-PSV-06/07, Model 4N6JBS-E15A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	2					
9	Pressure Safety Valve Tag No. 40-PSV-08, Model 1.5H3JBS-E15E-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
10	Pressure Safety Valve Tag No. 50-PSV-01, Model 1.5D2JOS-E52M7E, Material: SS SA351-CF8M, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
11	Pressure Safety Valve Tag No. 50-PSV-03, Model 1D2JOS-E32M7E, Material: SS SA351-CF8M, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
12	Pressure Safety Valve Tag No. 50-PSV-05, Model 1D2JOS-E45C6A, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	1					
13	Pressure Safety Valve Tag No. 60-PSV-01/02, Model 1.5F2JBS-E35A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly, Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	Number	2					

(Signature)
AHMED ZIA
 Dy. Chief Engr. (ELECT)
 P&P-N, Ext.

OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT ISLAMABAD
FOREIGN SECTION C


(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

Material: PRESSURE SAFETY VALVES FOR DAKHNI GAS PLANT.
 Tender Enquiry No: PROC-FC/CB/P&P/DKN-5266/2022
 Due Date:
 Evaluation Criteria: FULL

	TOR	Number
14	Pressure Safety Valve Tag No. 60-PSV-03, Model 3K4JBS-E35A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	1
15	Pressure Safety Valve Tag No. 60-PSV-05, Model 1.5F2JBS-E35A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	1
16	Pressure Safety Valve Tag No. 60-PSV-07, Model 1.5F2JOS-E35A-N2, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	1
17	Pressure Safety Valve Tag No. 806-PSV-01, Model 1.5H3JBS-E15C6E, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	1
18	Pressure Safety Valve Tag No. 806-PSV-02, Model 3K4JBS-E15C6E, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	1
19	Pressure Safety Valve Tag No. 911-PSV-01/02/03/04, Model 1E2JLTJOS-E35C6E, Material: CS SA216-WCB/WCC, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	4
20	Pressure Safety Valve Tag No. 911-PSV-06/07/08, Model 95110121A, Material: CS SA216-WCB, Valve Type: Spring - Operated, Standard Valve Assembly. Make: CROSBY or equivalent (as per attached DATA sheet & TOR)	3

Note: 1) EVALUATION CRITERIA: FULL CONSIGNMENT WISE ON CFR BY SEA. KARACHI. 2) BIDDERS ARE ADVISED THAT PAYMENT TERMS 80% - 20% WILL BE MADE AS PER THE FOREIGN PROCUREMENT PAYMENT TERMS AVAILABLE AT OGDCL WEBSITE. 3) BID VALIDITY: 180-DAYS. 4) DELIVER PERIOD: 210-DAYS. 5) BID BOND VALUE US\$ 5,600K/- OR EQUIVALENT TO PAK RUPEES MUST BE SUBMITTED WITH THE TECH BID. 6) MASTER SET OF TENDER DOCUMENTS, SINGLE STAGE TWO-ENVELOPE BIDDING IS AVAILABLE ON OGDCL WEBSITE.



AHMED ZIA
 Dy. Chief Engr. (ELECT)
 P&P-N, Ext:

CLARIFICATION NO.1

TERMS OF REFERENCE (TOR) FOR DKN-10823 (PROC-FC/CB/P&P/DKN-5266/2022)

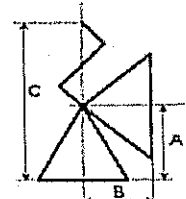
(PROCUREMENT OF PRESSURE SAFETY VALVES FOR DAKHNI)

1. Valves must be new & free from any defect.
2. Manufacturer must have 20 years of experience for manufacturing such type of pressure safety valves, documentary evidence shall be provided.
3. Manufacturer/bidder must provide at least 3 references (documentary evidence with e-mail address) of already supplied such pressure safety valves at sour service plants and at least one reference of already supplied such safety valve at sour service plant having H2S content within OGDCL with proven satisfactory performance of such valves for at least ten years of operation.
4. OGDCL may carry out the third party pre-shipment inspection of the material.
5. All the wetted parts of the pressure safety valves must be NACE compliant.
6. Manufacturer must provide the calibration and material test certificate.
7. Pressure safety valves must have standard OEM warranty/guarantee.
8. If bidder found any change/update/superseded part nos., it should be incorporated in bid with confirmation that offered material is same in fit, form and functionality.
9. Parts must have standard OEM warranty/guarantee.
10. All safety valves must be ASME/ UV stamped.
11. All safety valves must comply Fugitive Emission Test (FET).
12. Pressure safety valves shall be installed at the plant having hydrogen sulphide gas in the range of 88,000ppm therefore material must be compatible & NACE compliance to encounter the hazardous conditions.
13. Name plate of the pressure safety valve must be showing the tag no. along with model number & operating pressure.
14. Original authority letter for participation in the bid from OEM/OEM's distributor must be provided with technical bid.
15. Bidder must confirm that quoted items are 100% fit in specification, size and function/metallurgy for the model mentioned by OGDCL.
16. Country of origin with complete address of the factory to be provided in technical bid.
17. OGDCL Engineer may visit the manufacturing facility to witness the manufacturing process, inspection & hydro test of the pressure safety valves on OGDCL expense.
18. Bidders quoting Equivalent valves must provide a certificate from at least three E&P companies of foreign jurisdiction other than bidders/manufacturers own country, stating that equivalent (valves) are used by them and performance of such valves is found satisfactory. Copies of Purchase Orders (unpriced) must also be provided. The certificate(s) / sale record is mandatory and due to non-submission thereof, the bid will be rejected.
19. All other terms and conditions as per master bidding documents are applicable.
20. Data sheets are attached.


AHMED ZIA
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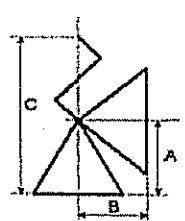
DATA SHEETS.

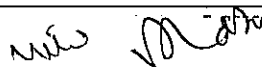
Valve ID				SIZING DATA				
1	Tag No. 60-PSV-07			41	Design Code	ASME Section VIII	Sizing Std. API 520	
2	Service			42	Sizing Basis	Valve Capacity		
3	PID No.			43	Fluid State at Inlet	Gas / Vapor		
4	Line No.			44	Relieving Case	Pressure Relief		
5	Quantity			45	Fluid Properties			
6	1			46	Fluid Name			
7	GENERAL			47	Natural Gas (SG=0.6)			
8	Valve Type Conventional, Direct Spring-Op			48	Molecular Weight, M			
9	Safety / Relief Safety			49	Compressibility, Z			
10	Nozzle Full			50	Ratio of Sp. Heats, k (Cp / Cv)			
11	CONNECTIONS			51	Gas Constant, C			
12	Inlet	1 1/2"	Fingd. 300# RF Standard	52				
13	Outlet	2"	Fingd. 150# RF ASME B16.5	53				
14	MATERIALS OF CONSTRUCTION			54				
15	Body / Base		CS SA216-WCB/WCC	55				
16	Bonnet / Cylinder		CS SA216-WCB/WCC	56				
17	Nozzle		316 SST	57				
18	Disc		316 SST	58				
19	Seat		Metal	59	Sizing Coefficients		Unit	
20	Spindle		316 SST	60	K, Gas	Kd, Gas	0.866	
21	Guide		SS A297 Gr. HE	61	Kb	Kc	1	
22	Spring		Inconel® X750	62				
23	Gaskets		316 SST	63				
24	Bellows		N/A	64	Required Capacity		Unit	
25	Cap Type		Screwed (Ht. Rest.)	65	Total		7577	
26	NACE MR0175/ISO 15156:2015		Yes	66				
27	Accessories			67	Pressures		Unit	
28				68	MAWP	Operating	198	
29				69	Set	CDTP	225	
30				70	Over Pressure		22.5	
31	SIZING / SELECTION SUMMARY			71				
32	Valve Model No.		1.5F2JOS-E35A-N2	72	Back Pressure	Built-Up	0	
33	Brand		Crosby®	73		Constant Superimposed	0	
34	Area	Calculated	Selected	74		Variable Superimposed	0	
35	(in²)	Data Set	Orifice	75	Total	0		
36		Unit	Required	76	Inlet Loss		0	
37	Flow	Rated	Actual	77	Atmospheric (Barometric)		14.696 psia	
38				78	Temperatures			
39	Reaction Force, Open Discharge		28.32 daN	79	Operating	Normal System		
40	Noise Level (db), Open Discharge		105.4 at 100-ft	80	Design Min	Relieving	198	
	Tag Notes				Valve Dimensions	A		
						in	4.88	
						B	6.00	
						C	20.25	
				lb	Weight	50		



WKS
MA
 APPROVED FOR
 Dy. Chief Engr. (ELECT)
 P&P-N, Ext:

Valve ID				SIZING DATA			
1	Tag No. 120-PSV-03			41	Design Code		
2	Service			42	ASME Section VIII	Sizing Std.	API 520
3	PID No.			43	Sizing Basis		
4	Line No.			44	Blocked Discharge		
5	Quantity			45	Fluid State at Inlet		
6	1			46	Gas / Vapor		
7	GENERAL			47	Relieving Case		
8	Valve Type			48	Pressure Relief		
9	Conventional, Direct Spring-Op			49	Fluid Properties		
10	Safety / Relief			50	Fluid Name		
11	Safety			51	Natural Gas (SG=0.6)		
12	Balanced			52	Molecular Weight, M		
13	No			53	17.400		
14	Nozzle			54	Compressibility, Z		
15	Full			55	1.000		
16	Bonnet			56	Ratio of Sp. Heats, k (Cp / Cv)		
17	Closed			57	1.270		
18	CONNECTIONS			58	Gas Constant, C		
19	Inlet			59	344.1		
20	2" Flngd. 1500# RF Standard			60	Sizing Coefficients		
21	Outlet			61	Unit		
22	3" Flngd. 300# RF ASME B16.5			62	-		
23	MATERIALS OF CONSTRUCTION			63	K, Gas		
24	Body / Base			64	Kd, Gas		
25	CS SA216-WCB/WCC			65	0.866		
26	Bonnet / Cylinder			66	0.962		
27	CS SA216-WCB/WCC			67	Kb		
28	Nozzle			68	Kc		
29	316 SST			69	1		
30	Disc			70	1		
31	316 SST			71	Required Capacity		
32	Seat			72	Unit		
33	Metal			73	Total		
34	Spindle			74	Pressures		
35	316 SST			75	Unit		
36	Guide			76	psig		
37	SS A297 Gr. HE			77	MAWP		
38	Spring			78	Operating		
39	Inconel® X750			79	Set		
40	Gaskets			80	CDTP		
41	316 SST			81	1480		
42	Bellows			82	Over Pressure		
43	N/A			83	148		
44	Cap Type			84	10%		
45	Screwed (Ht. Rest.)			85	Back Pressure		
46	Yes			86	Bullt-Up		
47	NACE MR0175/ISO 15156:2015			87	Constant Superimposed		
48	Yes			88	Variable Superimposed		
49	Accessories			89	Total		
50				90	0		
51				91	0		
52				92	0		
53				93	0		
54				94	0		
55				95	0		
56				96	0		
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275				315	0		
276				316	0		
277				317	0		
278				318	0		
279				319	0		
280				320	0		
281				321	0		
282				32			

Valve ID					SIZING DATA					
1	Valve ID				41	SIZING DATA				
2	Tag No.	120-PSV-04			42	Design Code	ASME Section VIII	Sizing Std.	API 520	
3	Service				43	Sizing Basis	Blocked Discharge			
4	PID No.				44	Fluid State at Inlet	Gas / Vapor			
5	Line No.			Quantity	45	Relieving Case	Pressure Relief			
6				1	46	Fluid Properties				
7	GENERAL				47	Fluid Name		Natural Gas (SG=0.6)		
8	Valve Type	Conventional, Direct Spring-Op			48	Molecular Weight, M		17.400		
9	Safety / Relief	Safety	Balanced	No	49	Compressibility, Z		1.000		
10	Nozzle	Full	Bonnet	Closed	50	Ratio of Sp. Heats, k (Cp / Cv)		1.270		
11	CONNECTIONS				51	Gas Constant, C		344.1		
12	Inlet	2"	Fngd.	1500# RF	Standard					
13	Outlet	3"	Fngd.	300# RF	ASME B16.5					
14	MATERIALS OF CONSTRUCTION				54					
15	Body / Base		CS SA216-WCB/WCC		55					
16	Bonnet / Cylinder		CS SA216-WCB/WCC		56					
17	Nozzle		316 SST		57					
18	Disc		316 SST		58					
19	Seat		Metal		59	Sizing Coefficients		Unit	-	
20	Spindle		316 SST		60	K, Gas	Kd, Gas	0.866	0.962	
21	Guide		SS A297 Gr. HE		61	Kb	Kc	1	1	
22	Spring		Inconel® X750		62					
23	Gaskets		316 SST		63					
24	Bellows		N/A		64	Required Capacity		Unit		
25	Cap Type		Screwed (Ht. Rest.)		65	Total				
26	NACE MR0175/ISO 15156:2015		Yes		66					
27	Accessories				67	Pressures		Unit	psig	
28					68	MAWP	Operating			
29					69	Set	CDTP	1480	1480.00	
30					70	Over Pressure		148	10%	
31	SIZING//SELECTION SUMMARY				71					
32	Valve Model No.		2G3JOS-E65A-N2		72	Back Pressure		Built-Up	0	
33	Brand		Crosby®		73			Constant Superimposed	0	
34	Area	Calculated	Selected	0.567	74			Variable Superimposed	0	
35	(In ²)	Data Set	Orifice	ASME	75			Total	0	
36		Unit	Required	SCFM	76	Inlet Loss		0	0%	
37	Flow	Rated	Actual	17040.332	18933.702	77	Atmospheric (Barometric)		14.696 psia	
38					78	Temperatures				
39	Reaction Force, Open Discharge		466.53 daN		79	Normal System				
40	Noise Level (db), Open Discharge		122.9 at 100-ft		80	Operating	Relieving		150	
						Design Min	Design Max			
	Tag Notes					Valve Dimensions	A			
							in	6.13		
								B		
								6.75		
								C		
						23.25				
						lb	Weight			
							90			
										


 APPROVED BY
 D.A. Chief Engr (ELECT)
 PLS-B. 500

Valve ID					SIZING DATA				
1	Valve ID				41	SIZING DATA			
2	Tag No. 806-PSV-01				42	Design Code	ASME Section VIII	Sizing Std.	API 520
3	Service				43	Sizing Basis	Control Valve Failure		
4	PID No.				44	Fluid State at Inlet	Gas / Vapor		
5	Line No.			Quantity	45	Relieving Case	Pressure Relief		
6				1	46	Fluid Properties			
7	GENERAL				47	Fluid Name		Hydrocarbon Vapor	
8	Valve Type		Balanced Bellows, Direct Spring-Op		48	Molecular Weight, M		21.6	
9	Safety / Relief		Safety	Balanced Yes	49	Compressibility, Z		1.000	
10	Nozzle		Full	Bonnet Vented	50	Ratio of Sp. Heats, k (Cp / Cv)		1.270	
11	CONNECTIONS				51	Gas Constant, C		344.1	
12	Inlet	1 1/2"	Fingd.	150# RF Standard	52				
13	Outlet	3"	Fingd.	150# RF ASME B16.5	53				
14	MATERIALS OF CONSTRUCTION				54				
15	Body / Base		CS SA216-WCB/WCC		55				
16	Bonnet / Cylinder		CS SA216-WCB/WCC		56				
17	Nozzle		316 SST		57				
18	Disc		316 SST		58				
19	Seat		Metal		59	Sizing Coefficients		Unit	-
20	Spindle		416 SST		60	K, Gas	Kd, Gas	0.866	0.962
21	Guide		SS A297 Gr. HE		61	Kb	Kc	1	1
22	Spring		Inconel® X750		62				
23	Gaskets		316 SST		63				
24	Bellows		Inconel® 625		64	Required Capacity		Unit	lb/hr
25	Cap Type		Packed Lift Lever w/ Test Rod		65	Total		10000	
26	NACE MR0175/ISO 15156:2015		No		66				
27	Accessories				67	Pressures		Unit	psig
28					68	MAWP	Operating		
29					69	Set	CDTP	225	225.00
30					70	Over Pressure		22.5	10%
31	SIZING / SELECTION SUMMARY				71	Back Pressure		Built-Up Constant Superimposed	60
32	Valve Model No.		1.5H3JBS-E15C6E		72	Variable Superimposed		0	
33	Brand		Crosby®		73	Total		60	
34	Area	Calculated	Selected	0.652	0.887				
35	(in ²)	Data Set	Orifice	ASME	H				
36		Unit	Required	lb/hr	10000				
37	Flow	Rated	Actual	13612.786	15125.318	Inlet Loss		0	0%
38						Atmospheric (Barometric)		14.696 psia	
39	Reaction Force, Open Discharge			80.14 daN		Temperatures			
40	Noise Level (db), Open Discharge			106.5 at 100-ft		Normal System			
						Operating	Relieving	100	
						Design Min	Design Max		
Tag Notes					Valve Dimensions	in		A	
								5.13	
								B	
								4.88	
								C	
						23.75			
						lb	Weight	55	

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Valve ID				SIZING DATA			
1	Tag No. 806-PSV-02			41	Design Code	ASME Section VIII	Sizing Std. API 520
2	Service			42	Sizing Basis	Control Valve Failure	
3	PID No.			43	Fluid State at Inlet	Gas / Vapor	
4	Line No.		Quantity	44	Relieving Case	Pressure Relief	
5				45	Fluid Properties		
6	1			46	Fluid Name Hydrocarbon Vapor		
7	GENERAL			47	Molecular Weight, M 21.6		
8	Valve Type: Balanced Bellows, Direct Spring-Op			48	Compressibility, Z 1.000		
9	Safety / Relief: Safety		Balanced Yes	49	Ratio of Sp. Heats, k (Cp / Cv) 1.270		
10	Nozzle: Full		Bonnet Vented	50	Gas Constant, C 344.1		
11	CONNECTIONS			51	Sizing Coefficients		
12	Inlet	3" Flngd.	150# RF Standard	52	K, Gas	Kd, Gas	0.866 0.962
13	Outlet	4" Flngd.	150# RF ASME B16.5	53	Kb	Kc	0.933 1
14	MATERIALS OF CONSTRUCTION			54	Required Capacity		
15	Body / Base		CS SA216-WCB/WCC	55	Total		7838
16	Bonnet / Cylinder		CS SA216-WCB/WCC	56	Unit lb/hr		
17	Nozzle		316 SST	57	Pressures		
18	Disc		316 SST	58	MAWP	Operating	Unit psig
19	Seal		Metal	59	Set	CDTP	75 75.00
20	Spindle		416 SST	60	Over Pressure		7.5 10%
21	Guide		SS A297 Gr. HE	61	Back Pressure		
22	Spring		Inconel® X750	62	Built-Up		30
23	Gaskets		316 SST	63	Constant Superimposed		0
24	Bellows		Inconel® 625	64	Variable Superimposed		0
25	Cap Type		Packed Lift Lever w/ Test Rod	65	Total		30
26	NACE MR0175/ISO 15156:2015		No	66	Inlet Loss		0 0%
27	Accessories			67	Atmospheric (Barometric)		14.696 psia
28				68	Temperatures		
29				69	Normal System		Unit °F
30				70	Operating	Relieving	100
31	SIZING / SELECTION SUMMARY			71	Design Min		Design Max
32	Valve Model No.		3K4JBS-E15C6E	72	Valve Dimensions		
33	Brand		Crosby®	73	in		A
34	Area	Calculated	Selected	74	lb		Weight
35	(In ²)	Data Set	Orifice	75			116
36		Unit	Required	76	Diagram		
37	Flow	Rated	Actual	77	A schematic diagram of a Crosby valve showing dimensions A, B, and C. Dimension A is the total height, B is the width, and C is the height of the stem assembly.		
38				78			
39	Reaction Force, Open Discharge		60.72 daN	79			
40	Noise Level (db), Open Discharge		94.4 at 100-ft	80			

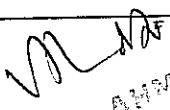
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Valve ID				SIZING DATA			
1	Tag No. 911-PSV-01/02/03/04			41	Design Code	ASME Section VIII	Sizing Std. API 520
2	Service			42	Sizing Basis	Fire Case	
3	PID No.			43	Fluid State at Inlet	Liquid	
4	Line No.			44	Relieving Case	Pressure Relief	
5	Quantity 4			45	Fluid Properties		
6	GENERAL			46	Fluid Name	LPG	
7	Valve Type Conventional, Direct Spring-Op			47	Sp. Gravity, G	0.48	
8	Safety / Relief Safety Relief			48	Viscosity	0.09000 cP	
9	Balanced No			49	Reynolds No.	528187.43	
10	Nozzle Full			50	Reynolds No. (max)	4527872.67	
11	CONNECTIONS			51			
12	Inlet	1"	Fingd. 300# RF Standard	52			
13	Outlet	2"	Fingd. 150# RF ASME B16.5	53			
14	MATERIALS OF CONSTRUCTION			54			
15	Body / Base		CS SA216-WCB/WCC	55			
16	Bonnet / Cylinder		CS SA216-WCB/WCC	56			
17	Nozzle		316 SST	57			
18	Disc		316 SST	58			
19	Seal		Metal	59	Sizing Coefficients		
20	Spindle		416 SST	60	K, Liquid	Kd, Liquid	Unit -
21	Guide		SS A297 Gr. HE	61	Kw	Kc	0.656 0.729
22	Spring		Inconel® X750	62	Kv	Kv (max)	1.0 1
23	Gaskets		316 SST	63			
24	Bellows		N/A	64	Required Capacity		
25	Cap Type		Packed Lift Lever w/ Test Rod	65	Total		Unit lb/hr
26	NACE MR0175/ISO 15156:2015		No	66			4000
27	Accessories			67	Pressures		
28				68	MAWP	Operating	Unit psig
29				69	Set	CDTP	265 265.00
30				70	Over Pressure		55.65 21%
31	SIZING/SELECTION SUMMARY			71	Back Pressure		
32	Valve Model No.		1E2JLTJOS-E35C6E	72	Built-Up		0
33	Brand		Crosby®	73	Constant Superimposed		0
34	Area	Calculated	0.026	74	Variable Superimposed		0
35	(in ²)	Data Set	ASME	75	Total		0
36	Flow	Unit	lb/hr	76	Inlet Loss		0 0%
37		Required	4000	77	Atmospheric (Barometric)		14.696 psia
38		Rated	34289.893	78	Temperatures		
39	Reaction Force, Open Discharge		2.22 daN	79	Operating	Normal System	Unit °F
40	Noise Level (db), Open Discharge		N/A	80	Design Min	Relieving	140 140
	Tag Notes				Design Max		
					Valve Dimensions		
					A		
					4.13		
					B		
					4.50		
					C		
					20.00		
					Weight		
					36		

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Valve ID				SIZING DATA					
1	Tag No. 911-PSV-06/07/08			41	Design Code	ASME Section VIII	Sizing Std. API 520		
2	Service			42	Sizing Basis	Thermal Relief			
3	PID No.			43	Fluid State at Inlet	Liquid			
4	Line No.			44	Relieving Case	Pressure Relief			
5	Quantity			45	Fluid Properties				
6	3			46	Fluid Name LPG				
7	GENERAL			47	Sp. Gravity, G 0.48				
8	Valve Type Conventional, Direct Spring-Op			48	Viscosity 0.09000 cP				
9	Safety / Relief	Safety Relief	Balanced No	49	Reynolds No. 3125473.32				
10	Nozzle	Full	Bonnet Closed	50	Reynolds No. (max)				
11	CONNECTIONS			51	Sizing Coefficients				
12	Inlet	3/4" Flngd.	300# RF Standard	52	K, Liquid	Kd, Liquid	0.662 0.735		
13	Outlet	1" Flngd.	150# RF ASME B16.5	53	Kw	Kc	1.0 1		
14	MATERIALS OF CONSTRUCTION			54	Kv	Kv (max)	1.0		
15	Body Cylinder	CS SA216-WCB		55	Required Capacity				
16	Body Base	316 SST		56	Total				
17	Connections	Carbon Steel		57	Pressures				
18	Disc	316 SST		58	MAWP Operating				
19	Seat	Metal		59	Set	CDTP	358 358.00		
20	Seals	N/A		60	Over Pressure 35.8 10%				
21	Splindle	416 SST		61	Back Pressure	Built-Up	0		
22	Guide	316 SST		62		Constant Superimposed	0		
23	Spring	17-7 PH SST		63		Variable Superimposed	0		
24	Cap Type	Screwed		64	Total	0	0		
25	NACE MR0175/ISO 15156:2015	No		65	Inlet Loss 0 0%				
26	Accessories			66	Atmospheric (Barometric) 14.696 psia				
27				67	Temperatures				
28				68	Operating	Normal System			
29				69	Design Min	Relieving	140		
30			70	Design Max					
31	SIZING / SELECTION SUMMARY			71					
32	Valve Model No.		95110121A	72					
33	Brand		Crosby®	73					
34	Area	Calculated	Selected	74					
35	(in ²)	Data Set	Orifice	75					
36		Unit	Required	76					
37	Flow	Rated	Actual	77					
38				78					
39	Reaction Force, Open Discharge		1.57 daN	79					
40	Noise Level (db), Open Discharge		N/A	80					
Tag Notes				Valve Dimensions				A	
								4.25	
								B	
								4	
								C	12.81
lb	Weight	11							


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