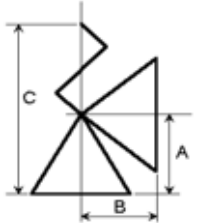
 <p>EMERSON edgardovicente.chiari@emerson.com</p> <p>Madrid, Spain +34 911 111 320 edgardovicente.chiari@emerson.com</p>				Pressure Relief Valve Sizing & Selection Report							
				1	EVC			20-abr.-2022	New process data		
				0	EVC			27-jul.-2021			
Quote Number: 093-093				No	Prpd.	Chk.	Appr.	Date	Revision		
Client: TECHNIP ENERGIES Location: CARTAGENA, SPAIN Project: C43 "New Bios 2G Hydrotreatment Unit"											
End-User Ref. No.: 201754C001 Project Ref. No.: U-608 Hydrogen Unit											
1	Valve ID				41	SIZING DATA					
2	Tag No.	608-PSV-1038			42	Design Code	ASME VIII/XIII - UV		Sizing Std.	API 520	
3	Service	C-231 fuel gas K.O. Drum			43	Sizing Basis	Fire Case				
4	PID No.	P-C43-A-110990 H45			44	Fluid State at Inlet	Gas / Vapor				
5	Line No.	1-1/2"-FG-4512-B4-P	Quantity	1	45	Relieving Case	Pressure Relief				
6					46	Fluid Properties					
7	GENERAL				47	Fluid Name		HYDROCARBON			
8	Valve Type	Balanced Bellows, Direct Spring-Op			48	Molecular Weight, M		45.52			
9	Safety / Relief	Safety	Balanced	Yes	49	Compressibility, Z		0.912			
10	Nozzle	Full	Bonnet	Vented	50	Ratio of Sp. Heats, k (Cp / Cv)		1.108			
11	CONNECTIONS				51	Gas Constant, C		248.7			
12	Inlet	1"	Flnkd.	300# RF	Standard	52					
13	Outlet	2"	Flnkd.	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					
20	Spindle	416 SST			60	Effective K, Gas		0.975			
21	Guide	SS A297 Gr. HE			61	Kb	Kc	0.968	1		
22	Spring	Chrome Steel - Corr. Rest.			62						
23	Gaskets	316 SST			63						
24	Bellows	Inconel® 625			64	Required Capacity					
25	Cap Type	Screwed w/ Test Rod			65	Total		455			
26	NACE MR0175/ISO 15156:2015	No			66						
27	Accessories	Bug Screen			67	Pressures					
28		MAWP		Operating	5.8	kg/cm² g					
29		Set		CDTP	5.8	5.800					
30		Over Pressure		1.218	21%						
31	SIZING / SELECTION SUMMARY					71	Built-Up		2.3		
32	Valve Model No.	1D2JBS-E35K-P			72	Back Pressure	Constant Superimposed		0		
33	Brand	Crosby®			73		Variable Superimposed		0		
34	Area	Calculated	Selected	0.642	0.710		Total		2.3		
35	(cm²)	Data Set	Orifice	API	D	Inlet Loss		0		0%	
36	Flow	Unit	Required	kg/hr	455	Atmospheric (Barometric)		1.033		kg/cm² a	
37		Maximum	503.131								
38											
39	Reaction Force, Open Discharge		37 N			77	Temperatures				
40	Noise Level (db), Open Discharge		114.1 at 1.0000-m			78	Normal System				
						79	Operating	Relieving	38	67.9	
						80	Design Min	Design Max		150	
Tag Notes	1. Standard C4M acc. ISO 12944 2. Opening Adjustment:5%. 3. NAC E 0103 certificate required (disc & bellow). 4. ASME "UV" Stamp required.					Valve Dimensions	mm	A			
								104.90			
								B			
								114.30			
								C			
								514.35			
kg	Weight	16.33									