











OWNER:  شرکت سست موبلی آوند ایرانیان (سهامی خاص)	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT		
	MC :  شرکت سست موبلی آوند ایرانیان سهامی خاص	PULSATION DAMPER MECHANICAL DATA SHEET FOR NITROGEN GAS BOOSTER						 Netherlands	
Owner Document Number: 17811-11C	Project							Area	Phase
	BU	20	VD	303	ME	DSH	0027	Rev.: 02	Page 1 of 4

PULSATION DAMPER MECHANICAL DATA SHEET FOR NITROGEN GAS BOOSTER

 شرکت سست موبلی آوند ایرانیان سهامی خاص	 Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT
Document Review		
Issue Purpose:	IFA	
Result Code: AP,AN,CM,RE,NC	CM	
Next Status : IFC,IFA,IFI,AFC,AB	IFA	
Responsible Department	MECHANICAL	
Commented Date	Apr/ 13/2022	
Approval or review hereunder shall not be construed to relieve Vendor / Subcontractor of his responsibilities and liability under the contract.		



02	10/03/2022	For approval	KP	CL	JR	
01	28/02/2022	For approval	KP	CL	JR	
00	11/12/2020	For approval	KP	KP	KP	
Rev.	Date	Purpose of Issue	Prepared	Checked	Approved	AC Code
					Class: 2	Phase: DE


OWNER:  شرکت سست موبلی آوند ایرانیا (سایه نفاص)	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT		
	PULSATION DAMPER MECHANICAL DATA SHEET FOR NITROGEN GAS BOOSTER						 Netherlands		
MC :  شرکت سست موبلی آوند ایرانیا (سایه نفاص)	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445	
Owner Document Number: 17811-11C	BU	20	VD	303	ME	DSH	0027	Rev.:	Page
								02	2 of 4

TABULATION OF REVISED PAGES

Page	D00	D01	D02	D03	D04
1.	X	X	X		
2.	X	X	X		
3.	X	X	X		
4.		X	X		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					

Page	D00	D01	D02	D03	D04
35.					
36.					
37.					
38.					
39.					
40.					
41.					
42.					
43.					
44.					
45.					
46.					
47.					
48.					
49.					
50.					
51.					
52.					
53.					
54.					
55.					
56.					
57.					
58.					
59.					

VENDOR				Pulsation damper mechanical datasheet		P.O. No.	52-98/445
						Document No.	17811-11C
						Sheet No.	3
						Rev.No	02
CONTRACTOR / END USER				BUSHEHR PETRO COMP MEG PL		nitrogen compressor package	
6. Discrepancy with PID. PID shall be revised.				1st stage inlet pulsation damper (20-DC-100z-1)		Please check the design pressure with pulsation dampener drawing.	
1							
2	OPERATING PRESSURE	Bar(a)	9 bar(a)				
3	DESIGN PRESSURE	Bar(a)	13,5 bar(a)				
4	HYDROTEST PRESSURE		1.3 X MAWP as per ASME VIII				
5	OPERATING TEMPERATURE	°C	5-55		1. 5-52 oC		
6	DESIGN TEMPERATURE	°C	0-85				
7	DESIGN CODE		ASME VIII Div. 1 Ed. 2021				
8	MATERIAL CERTIFICATE		3.1				
9	MATERIAL OF CONSTRUCTION		Shell /pipes : SA106 gr B, Heads : SA234 WPB, flanges : SA105				
10	NOZZLE SIZE INLET/OUTLET		2" 150# for inlet and outlet, 1/2 NPT-F for drain				
11	DIMENSIONS	DIAX TT	12" X 1100 mm				
12	WEIGHT EMPTY	kg	120				
13	WEIGHT FILLED WITH WATER	kg	210				
14	CAPACITY	Liters	90		With reference to pulsation dampener drawing, capacity is 96 lit.		
15	TESTING AS PER CODE		ASME VIII Div. 1 Ed. 2				
16	CORROSION ALLOWANCE	mm	3				
17	PWHT	Yes/No	No				
18	THICKNESS	mm	9.52				
19	Design approach		API 618 Design approach 2				
20	Maximum Allowable Pulsation Pressure as per clause 7.9.4.2.5.3.1 of API 618.						7. Discrepancy with PID. design pressure shall not be less than PSV set pressure.
21	Maximum Allowable Pulsation Pressure as per clause 7.9.4.2.5.3.1 of API 618.						
23	Maximum Allowable Pulsation Limits at and Beyond Line-side Nozzles of Pulsation Suppression Devices as per clause 7.9.4.2.5.2.1 of API 618.	Bar	0,536				With reference to P&ID, design pressure is 26 bara.
24							
						1st stage outlet pulsation damper (20-DC-1002-2)	
25	OPERATING PRESSURE	Bar(a)	15,5 bar(a)				
26	DESIGN PRESSURE	Bar(a)	25 bar(a)				2. Discrepancy with PID. in PID 134 oC
27	HYDROTEST PRESSURE		1.3 X MAWP as per ASME VIII				
28	OPERATING TEMPERATURE	°C	5-55				
29	DESIGN TEMPERATURE	°C	0-210				
30	DESIGN CODE		ASME VIII Div. 1 Ed. 2021				
31	MATERIAL CERTIFICATE		3.1				
32	MATERIAL OF CONSTRUCTION		Shell /pipes : SA106 gr B, Heads : SA234 WPB, flanges : SA105				
33	NOZZLE SIZE INLET/OUTLET		2" 300# for inlet and outlet, 1/2 NPT-F for drain				
34	DIMENSIONS	DIAX TT	12" X 1100 mm				
35	WEIGHT EMPTY	kg	110				
36	WEIGHT FILLED WITH WATER	kg	190				
37	CAPACITY	Liters	80				
38	TESTING AS PER CODE		ASME VIII Div. 1 Ed. 2021				
39	CORROSION ALLOWANCE	mm	3				
40	PWHT	Yes/No	No				
41	THICKNESS	mm	9.52				
43	Design approach		API 618 Design approach 2				
44	Maximum Allowable Compressor Cylinder Flange Pressure Pulsation as per clause 7.9.4.2.5.2.1 of API 618.	Bar	6,64%				
45	Maximum Allowable Pressure Drop as per clause 7.9.4.2.5.3.1 of API 618.	Bar	0,15				
46	Maximum Allowable Pulsation Limits at and Beyond Line-side Nozzles of Pulsation Suppression Devices as per clause 7.9.4.2.5.2.1 of API 618.	Bar	1,433				
47							
48							
49	NOTES:	<p>With reference to clause 7.9.3.2 of API 618 5th and CES comments in revision 01, $V_d = 1.6x (V_s/r1/k)$. Therefore, discharge pulsation dampener capacity of first stage of compressor shall not be less than 98 Lit. Also please be noted that volume of pulsation dampener can be calculated as per formula of design approach 1 even if pulsation dampener is designed as per design approach 2. If 96 liter inlet pulsation dampener will apply, discharge pulsation dampener capacity shall not be less than 105 liter.</p>					
50							
51							
52							

VENDOR		Pulsation damper mechanical datasheet		P.O. No.	52-98/445		
				Document No.	17811-11C		
				Sheet No.	4		
				Rev.No	02		
		BUSHEHR PETROCHEMICAL COMPANY MEG PLANT		Service	nitrogen compressor package		
2nd stage inlet pulsation damper (20-DC-1002-3)							
2	OPERATING PRESSURE	Bar(a)	15,5 bar(a)	4. Please revise P&ID.			
3	DESIGN PRESSURE	Bar(a)	25 bar(a)				
4	HYDROTEST PRESSURE		1.3 X MAWP as per ASME VIII				
5	OPERATING TEMPERATURE	°C	50				
6	DESIGN TEMPERATURE	°C	0-85	5. P&ID shall be revised considering 85 C.			
7	DESIGN CODE		ASME VIII Div. 1 Ed. 2021				
8	MATERIAL CERTIFICATE		3.1	5. P&ID shall be revised considering 85 C.			
9	MATERIAL OF CONSTRUCTION		Shell /pipes : SA106 gr B, Heads : SA234 WPB, flanges : SA105				
10	NOZZLE SIZE INLET/OUTLET		2" 300# for inlet and outlet, 1/2 NPT-F for drain				
11	DIMENSIONS	DIxT	10" X 600 mm				
12	WEIGHT EMPTY	kg	75				
13	WEIGHT FILLED WITH WATER	kg	115				
14	CAPACITY	Liters	34				
15	TESTING AS PER CODE		ASME VIII Div. 1 Ed. 2021				
16	CORROSION ALLOWANCE	mm	3				
17	PWHT	Yes/No	No				
18	THICKNESS	mm	9,27				
20	Design approach		API 618 Design approach 2	5. P&ID shall be revised considering 85 C.			
21	Maximum Allowable Compressor Cylinder Flange Pressure Pulsation as per clause 7.9.4.2.5.2.1 of API618.		4,54%				
22	Maximum Allowable Pressure Drop as per clause 7.9.4.2.5.3.1 of API 618.	Bar	0,0636				
23	Maximum Allowable Pulsation Limits at and Beyond Line-side Nozzles of Pulsation Suppression Devices as per clause 7.9.4.2.5.2.1 of API 618.	bar	0,739	5. P&ID shall be revised considering 85 C.			
25	2nd stage outlet pulsation damper (20-DC-1002-4)						
26	OPERATING PRESSURE	Bar(a)	23,5 bar(a)			5. P&ID shall be revised considering 85 C.	
27	DESIGN PRESSURE	Bar(a)	26 bar(a)				
28	HYDROTEST PRESSURE		1.3 X MAWP as per ASME VIII				
29	OPERATING TEMPERATURE	°C	64				
30	DESIGN TEMPERATURE	°C	0-85			5. P&ID shall be revised considering 85 C.	
31	DESIGN CODE		ASME VIII Div. 1 Ed. 2021				
32	MATERIAL CERTIFICATE		3.1			5. P&ID shall be revised considering 85 C.	
33	MATERIAL OF CONSTRUCTION		Shell /pipes : SA106 gr B, Heads : SA234 WPB, flanges : SA105				
34	NOZZLE SIZE INLET/OUTLET		2" 300# for inlet and outlet, 1/2 NPT-F for drain				
35	DIMENSIONS	DIxT	10" X 800 mm				
36	WEIGHT EMPTY	kg	85				
37	WEIGHT FILLED WITH WATER	kg	130				
38	CAPACITY	Liters	45				
39	TESTING AS PER CODE		ASME VIII Div. 1 Ed. 2021				
40	CORROSION ALLOWANCE	mm	3				
41	PWHT	Yes/No	No				
42	THICKNESS	mm	9,27				
44	Design approach		API 618 Design approach 2	5. P&ID shall be revised considering 85 C.			
45	Maximum Allowable Compressor Cylinder Flange Pressure Pulsation as per clause 7.9.4.2.5.2.1 of API618.	Bar	4,54%				
46	Maximum Allowable Pressure Drop as per clause 7.9.4.2.5.3.1 of API 618.	Bar	0,0603				
47	Maximum Allowable Pulsation Limits at and Beyond Line-side Nozzles of Pulsation Suppression Devices as per clause 7.9.4.2.5.2.1 of API 618.	bar	0,9	5. P&ID shall be revised considering 85 C.			
45							
46							
47							
48	NOTES:						
49							
50							
51							

3. As per P&ID, design pressure is 26 bara.

4. Please revise P&ID.

With reference to pulsation dampener drawing, capacity is 38 liter.

With reference to compressor data sheet discharge temperature of stage 2 is reported 134 C.

5. P&ID shall be revised considering 85 C.

With reference to pulsation dampener drawing, capacity is 48 liter.