

AAC		DATA SHEET		Date : 2024.Nov.25	
		AIR COOLED HEAT EXCHANGER		Rev : 4	
		ABAN AIR COOLER CO		CASE: 00012-AC-3991	
Customer / Purch.	(PEDCO) / (NISOC)		Item no.:		AE-2102 (A/B/C)
Plant location	Binak oilfield				Summer Case
Service	2st Stage Gas Compression Cooler		No. Units:		3
Plot size(W,L) [m]	2.172 x 3.90 (note2)		DRAFT INDUCED		No.of bay: 1
Surface / unit-Finned	1027	[m2]	Bare Tube	48.548	[m2]
Heat exchanged	582 (note 1)	[KW]	MTD	31.3	[C]
Transf. rate-finned	18.267	[W/m2 .k]	Bare Tube (C/D)	428.51/ 386.44	[W/m2k]
PRODUCT SIDE					
Fluid Name	Hydrocarbon		IN	OUT	
Total Fluid [kg/h]	8664 x 1.1 (note 1)		Density (Liq)	981.96	[kg/m3]
Temperature [C]	148	60	Density (vap)	42.156	60.185 [kg/m3]
Vapor [kg/h]	9530.4	9489.2	Spec.Heat (Liq)	4.3096	kJ/(kg.°C)
Liquid [kg/h]		41.263	Spec.Heat (vap)	2.4255	2.4072 kJ/(kg.°C)
N condensed [kg/h]			Conduct. (Liq)	0.6515	[W/Mk]
Steam [kg/h]			Conduct. (vap)	0.0473	0.0371 [W/Mk]
Water [kg/h]			Viscosity (Liq)	0.4943	[cp]
Inlet pressure [barg]	54.8		Viscosity (Vap)	0.0164	0.0142 [cp]
Fouling resist.[m2.k/w]	0.0002		Velocity	4.2	2.93 [m/s]
			Allo/Calc. Press.Drop	0.700 / 0.097	[bar]
AIR SIDE					
AirQuantity, Total (Per Unit)	31.42	[m3/s]	Face Velocity:	3.27	[m/s]
AirQuant./Fan	15.71	[m3/s]	Altit. / Min. Des.Amb.:	12.5 / 5	[m]/[C]
Static pressure	168.85	[Pa]	Temp.In / Out :	50.26 / 68.06	[C]
DESIGN					
Design pressure	62	[Barg]	Code Requirements	ASME VIII DIV.1 ; API 661	
Design temperature	175	[C]	Material	TUBE	
Test pressure	80.60	[Barg]	Material	SA-213 TP316L	
BAY width [m]	2.172		Outside Diameter	25.4	[mm]
Bundle Size	2.116 x 3.900		Wall Thickness	1.651	[mm]
N .Bay	1		N ./Bundle	156	
N .Bundles / Bay	1		Length	3.9	[m]
N .Tube Rows	6		Pitch	70.5	[mm]
N .Passes	4				FIN
Tube slope	1% on last pass		Type	EXTRUDED	
HEADER			Material	ALUMINIUM alloy 1060 - O	
Type	Plug		Outside Diameter	57.15	[mm]
Material	SA-240 TP316L		Stock Thick.	0.48	[mm]
Header Design / SPLIT	Shoulder/No		FPM	400	
Plug Mat	SA 182 F316L		MISCELLANEOUS		
Gasket Mat	Solid Metal		Structural Mounting	Ground	
Corrosion Allow.	0	[mm]	Bundle Frame	H.D.G	
Qty / Size nozzle IN	1 X4" (80S)		Louvers	Yes, (Manual)	
Qty / Size nozzle OUT	1 X 4" (80S)		Vibration switches	Yes, EExd, IIB T3 (IP 65)	
Rating & Facing (in/out)	600 RF		Steam Coil	No	
TI/PI	Yes (2") / Yes (2")		Recirculation System	No	
Vent / Drain	Yes (2") / Yes (2")	LWN #600	Tube / Tubesheet Connection.	Expanded + Strength weld	
MECH. EQUIPMENT					
FAN			ELECTRIC MOTOR		
N ./Bay	2		N ./Bay	2	
N .autovvariable/bay	50%		KW / Driver	7.5	
rev / min	645.4		rev / min	1500	
Diameter	1450	mm	Enclosure	EExd, IIB T3 (IP 55)	
N . Blades	4		Volt, Phase, Cycle	400-3-50	
Material, Blade	AL		SPEED REDUCER		
Material, Hub	Steel/Alu		Type	V-Belt	
KW / Fan, Absorb.	4.8		N .Bay	2	
Type of fan ring	Conical 30 deg		Service Factor	1.8	
SPL@ 1m beside. fan	≤85	[dB(A)]	Ratio	2.32	
NOTES:					
1- 10% over design on duty and flow has been considered.					
2- Plot size is without considering side walkways.					
3- Air side fouling factor has been considered equal to 0.00035 m2.K/w.					
4- Thechnical Bid is in compliance with NACE MR 0175/ISO 15156 and Technical Specification for Material Requirements in Sour service Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0008					
5- Maximum allowable nozzle load = 3 x API.					
6-MDMT is considered 5 C					
7-Physical properties changed based on last revision of PFD Doc.No:BK-GCS-HY-120-PR-PF-0001-V04-AP					
8-Primarily fan data sheet is attached and final fan data sheet will be submitted after subvendor finalization.					