

AAC		DATA SHEET AIR COOLED HEAT EXCHANGER ABAN AIR COOLER CO			Date :	2024.Nov.25
					Rev :	4
					CASE:	00012-AC-3991
Customer / Purch.		(PEDCO) / (NISOC)			Item no.:	AE-2101 (A/B/C)
Plant location		Binak oilfield			Winter case	
Service		1st Stage Gas Compression Cooler			No. Units: 3	
Plot size(W,L) [m]		1.97 x 3.8 (note2)		DRAFT INDUCED	No.of bay: 1	
Surface / unit-Finned		668.71 [m2]		Bare Tube	31.536 [m2]	
Heat exchanged		276 (Note 1.9) [KW]		MTD	26.3 [C]	
Transf. rate-finned		19.37 [W/m2.k]		Bare Tube (C/D)	458.48 / 410.75 [W/m2k]	
PRODUCT SIDE						
Fluid Name		Hydrocarbon			IN	OUT
		IN	OUT	Density (Liq)		[kg/m3]
Total Fluid [kg/h]		7585 x 1.1 (note 1)		Density (vap)	12.847	14.916 [kg/m3]
Temperature [C]		116 60		Spec.Heat (Liq)		kJ/(kg.°C)
Vapor [kg/h]		8343.5 8343.5		Spec.Heat (vap)	2.2197	2.029 kJ/(kg.°C)
Liquid [kg/h]				Conduct. (Liq)		[W/Mk]
N condensed [kg/h]				Conduct. (vap)	0.0441	0.0356 [W/Mk]
Steam [kg/h]				Viscosity (Liq)		[cp]
Water [kg/h]				Viscosity (Vap)	0.0137	0.0121 [cp]
Inlet pressure [barg]		17.9 (note 6)		Velocity	18.09	15.58 [m/s]
Fouling resist.[m2.k/w]		0.0002		Allo/Calc. Press.Drop	0.700 / 0.416 [bar]	
AIR SIDE						
AirQuantity, Total		24.14 [m3/s]		Face Velocity:	2.9 [m/s]	
AirQuant./Fan		12.07 [m3/s]		Altit. / Min. Des.Amb.:	12.5 / 5 [m]/[C]	
Static pressure		137.4 [Pa]		Temp.In / Out :	50.26 / 61.02 [C]	
DESIGN						
Design pressure		22 [Barg]		Code Requirements	ASME VIII DIV.1 ; API 661	
Design temperature		155 [C]		TUBE		
Test pressure		28.60 [Barg]		Material	SA-213 TP316L	
BAY width [m]		1.97		Outside Diameter	25.4 [mm]	
Bundle Size		1.92 x 3.8		Wall Thickness	1.651 [mm]	
N .Bay		1		N ./Bundle	104	
N .Bundles / Bay		1		Length	3.8 [m]	
N .Tube Rows		4		Pitch	63.5 [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 X 6" (80S)		Louvers	Yes, (Manual)	
Qty / Size nozzle OUT		1 X 6" (80S)		Vibration switches	Yes, EExd, IIB T3 (IP 65)	
Rating & Facing (in/out)		300 RF		Steam Coil	No	
TI/PI		Yes (2") / Yes (2")		Recirculation System	No	
Vent / Drain		Yes (2") / Yes (2")		Tube / Tubesheet Connection.	Expanded + Strength weld	
				MECH. EQUIPMENT		
FAN				ELECTRIC MOTOR		
N ./Bay		2		N ./Bay	2	
N autovvariable/bay		50%		KW / Driver	5.5	
rev / min		626.4		rev / min	1500	
Diameter		1372 (4.5 FT) 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.		2.6		N .Bay	2	
Type of fan Ring		Flanged		Service Factor	1.8	
SPL@ 1m beside. fan		≤85 [dB(A)]		Ratio	2.39	
NOTES:						
1- 10% over design on duty / 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-GNRL-PEDCO-000-PI-SP-0008, IPS-MPM-200.						
5- Maximum allowable nozzle load = 3 x API.						
6-Physical properties changed based on last revision of PFD Doc.No:BK-GCS-HY-120-PR-PF-0001-V04-AP						
7-Deleted						
8-Primarily fan data sheet is attached and final fan data sheet will be submitted after subvondor finalization.						