

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			Summer case	
Service		1st Stage Gas Compression Cooler			No. Units:	3
Plot size(W,L) [m]		1.970 x 3.8 (note2)			DRAFT	INDUCED
Surface / unit-Finned		668.71 [m2]			Bare Tube	31.536 [m2]
Heat exchanged		381.8 [KW]			MTD	29.1 [C]
Transf. rate-finned		20.125 [W/m2 ,k]			Bare Tube (C/D)	478.50 / 426.74 [W/m2k]
					No. of bay:	1
					PRODUCT SIDE	
Fluid Name		Hydrocarbon			IN	OUT
		IN	OUT	Density (Liq)		[kg/m3]
Total Fluid [kg/h]		8664 x 1.1 (note 1)			Density (vap)	14.197 [kg/m3]
Temperature [C]		129	60	Spec.Heat (Liq)		kJ/(kg.°C)
Vapor [kg/h]		9530.4	9530.4	Spec.Heat (vap)	2.206	1.97 kJ/(kg.°C)
Liquid [kg/h]				Conduct. (Liq)		[W/Mk]
N condensed [kg/h]				Conduct. (vap)	0.0438	0.0336 [W/Mk]
Steam [kg/h]				Viscosity (Liq)		[cp]
Water [kg/h]				Viscosity (Vap)	0.0137	0.0117 [cp]
Inlet pressure [barg]		17.9	(note 6)	Velocity	18.7	15.49 [m/s]
Fouling resist.[m2.k/w]		0.0002			Allo/Calc. Press.Drop	0.700 / 0.473 [bar]
					AIR SIDE	
AirQuantity, Total		24.44	[m3/s]	Face Velocity:	2.9	[m/s]
AirQuant./Fan		12.22	[m3/s]	Altit. / Min. Des.Amb.:	12.5 / 5	[m]/[C]
Static pressure		138.77	[Pa]	Temp.In / Out :	50.26 / 65.15	[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") LWN #300			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		4.5 FT (1372mm)			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 subvendor finalization.						