

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)							
	شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴						شماره صفحه : 1 از 5	
Process Data Sheet for AE-2101 (A/B/C)								
پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
BK	GCS	AA	120	PR	DS	0001	V01	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

Process Data Sheet for AE-2101 (A/B/C)

نگهداشت و افزایش تولید میدان نفتی بینک

V01	Mar.2024	IFA	AAC	M.FAKHARIAN	S.FRAMARZPOR	
V00	Nov.2023	IFA	AAC	M.FAKHARIAN	S.FRAMARZPOR	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Status:

IFA: Issued For Approval
IFI: Issued For Information
AFC: Approved For Construction

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد 02_0015_CO-GCS-HD-BK)		  					
	Process Data Sheet for AE-2101 (A/B/C)		شماره صفحه: 2 از 5					
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادرکننده AA	تسهیلات 120	رشته PR	نوع مدرک DS	سریال 0001	نسخه V01

REVISION RECORD SHEET

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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)																									
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	<table><tr><th colspan="8">Process Data Sheet for AE-2101 (A/B/C)</th></tr><tr><th>نسخه</th><th>سریال</th><th>نوع مدرک</th><th>رشته</th><th>تسهیلات</th><th>صادر کننده</th><th>بسته کاری</th><th>پروژه</th></tr><tr><td>V01</td><td>0001</td><td>DS</td><td>PR</td><td>120</td><td>AA</td><td>GCS</td><td>BK</td></tr></table>	Process Data Sheet for AE-2101 (A/B/C)								نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	V01	0001	DS	PR	120	AA	GCS	BK	شماره صفحه : 3 از 5
Process Data Sheet for AE-2101 (A/B/C)																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه																			
V01	0001	DS	PR	120	AA	GCS	BK																			

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	Process Data Sheet for AE-2101 (A/B/C)							شماره صفحه : 4 از 5
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	BK	GCS	AA	120	PR	DS	0001	
								V01

1.0 INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Manufacturing (w/Engineering & Material Supply) of Air Coolers
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
OWNER:	OWNER is collectively refer to National Iranian South Oil Company (NISOC) and Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	Aban Air Cooler (AAC)
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	Third Party Inspector
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک
(قرارداد BK-HD-GCS-CO-0015 02)

شماره پیمان:

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Process Data Sheet for AE-2101 (A/B/C)

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	AA	120	PB	DS	0001	V01

شماره صفحه : 5 از 5

2.0 PROCESS DATA SHEET FOR AE-2101 (A/B/C)

Rev	A/C		DATA SHEET		Date :	2024.Mar.03
AIR COOLED HEAT EXCHANGER			ABAN AIR COOLER CO		Rev :	1
Customer / Purch.	(PEDCO) / (NISOC)			CASE:		00012-AC-3991
Plant location	Binak oilfield in Bushehr			Item no.:		AE-2101 (A/B/C)
Service	1st Stage Gas Compression Cooler			Summer case		
Plot size (W/L) [m]	3.50 x 5.250 (note2)		DRAFT	INDUCED	No. Units:	1
Surface / unit-Finned	847.16	[m2]	Bare Tube	40.217	[m2]	
Heat exchanged	391.34 (note 1)	[KW]	MTD	29.7	[C]	
Transf. rate-finned	15.758	[W/m2.k]	Bare Tube (C/D)	362.18 / 331.93	[W/m2K]	
PRODUCT SIDE						
Fluid Name	Hydrocarbon			IN	OUT	
Total Fluid [kg/h]	8564 x 1.1 (note 1)		Density (Liq)			[kg/m3]
Temperature [C]	129	60	Density (vap)	15.306	18.737	[kg/m3]
Vapor [kg/h]	9530.4	9530.4	Spec.Heat (Liq)			[kJ/(kg.°C)]
Liquid [kg/h]			Spec.Heat (vap)	2.223	2.0641	[kJ/(kg.°C)]
N condensed [kg/h]			Conduct. (Liq)			[W/MK]
Steam [kg/h]			Conduct. (vap)	0.0416	0.0331	[W/MK]
Water [kg/h]			Viscosity (Liq)			[cp]
Inlet pressure [barg]	18		Viscosity (Vap)	0.0148	0.0127	[cp]
Fouling resist [m2.kw]	0.0002		Velocity	9.87	7.91	[m/s]
			Allo/Calc. Press.Drop	0.700 / 0.086	[bar]	
AIR SIDE						
Air Quantity, Total	69.182	[m3/s]	Face Velocity:	3.45	[m/s]	
Air Quant./Fan	34.591	[m3/s]	Alt/it / Min. Des.Amb.:	12.5 / 5	[m]/[C]	
Static pressure	152.13	[Pa]	Temp.in / Out :	50.26 / 60.8	[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]	3.5		Outside Diameter	25.4	[mm]	
Bundle Size	1.59 x 5.250		Wall Thickness	1.651	[mm]	
N Bay	2 + 1		N /Bundle	96		
N Bundles / Bay	2		Length	5.25	[m]	
N Tube Rows	4		Pitch	63.5	[mm]	
N Passes	2 (equal)		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	393.7		
Plug Mat	SA 182 F316L		MISCELLANEOUS			
Gasket Mat	spiral wound + S.S 316 inner ring		Structural Mounting	Ground		
Corrosion Allow.	0	[mm]	Bundle Frame	H.D.G		
Qty / Size nozzle IN	2 X 6" (XXS)		Lowars	Yes, (Manual)		
Qty / Size nozzle OUT	2 X 6" (XXS)		Vibration switches	Yes, EExd, IIB T3 (IP 65)		
Rating & Facing (in/out)	300 RF		Steam Coil	No		
TI/PI	Yes (1") / Yes (3/4")		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 autovariable/bay	50%		KW / Driver	15		
rev / min	447.5		rev / min	1500		
Diameter	7	FT	Enclosure	EExd, IIB T3 (IP 55)		
N Blades	6		Volt, Phase, Cycle	400-3-50		
Material, Blade	AL		SPEED REDUCER			
Material, Hub	Steel/Alu		Type	V-Belt		
KW / Fan, Absorb.	9.9		N Bay	2		
			Service Factor	1.8		
SPL@ 1m beside fan	≤85	[dB(A)]	Ratio	3.35		
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.Kw.						
4- Technical Bid is in compliance with NACE MR 0175/ISO 15156 and Technical Specification for Material Requirements in Sour service Doc. No. BK-GNRRAL-PEDCO-000-PI-SP-0008, IPS-MPM-200.						
5- Maximum allowable nozzle load = 3 x API.						
6- This item, AE-2101 is share a common bay with item AE-2102.						