

	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: 053 - 073 - 9184						شماره صفحه: 1 از 6	
Process Data Sheet for AE-2102 (A/B/C)								
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	
V05	0002	DS	PR	120	AA	GCS	BK	

طرح نگهداشت و افزایش تولید 27 مخزن

Process Data Sheet for AE-2102 (A/B/C)

نگهداشت و افزایش تولید میدان نفتی بینک

V05	Jan.2025	AFC	AAC	M.FAKHARIAN	S.FRAMARZPOR	
V04	Nov.2024	AFC	AAC	M.FAKHARIAN	M.SADEGHIAN	
V03	Sep.2024	IFA	AAC	M.FAKHARIAN	M.SADEGHIAN	
V02	Aug.2024	IFA	AAC	M.FAKHARIAN	M.SADEGHIAN	
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

 شماره پیمان: 053 - 073 - 9184	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)							  
	Process Data Sheet for AE-2102 (A/B/C)							شماره صفحه: 2 از 6
پروژه BK	بسته کاری GCS	صادر کننده AA	تسهیلات 120	رشته PR	نوع مدرک DS	سریال 0002	نسخه V05	

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: 053 – 073 – 9184	Process Data Sheet for AE-2102 (A/B/C)							شماره صفحه : 3 از 6
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	AA	120	PR	DS	0002	V05

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شماره پیمان: 053 – 073 – 9184	Process Data Sheet for AE-2102 (A/B/C)							شماره صفحه : 4 از 6	
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	AA	120	PR	DS	0002	V05	

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:	Executer 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 usedwhere a provision is completely discretionary.

شماره پیمان: 053 – 073 – 9184	Process Data Sheet for AE-2102 (A/B/C)							شماره صفحه: 5 از 6	
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بنسٔ کاری		پروژه
	V05	0002	DS	PR	120	AA	GCS		BK

2.0 PROCESS DATA SHEET FOR AE-2102 (A/B/C)

Rev.			DATA SHEET		Date :	2025.Jan.26
			AIR COOLED HEAT EXCHANGER		Rev :	5
			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]	Alt. / 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]		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 X4" (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	Expanded + Strength weld		
MECH. EQUIPMENT						
FAN			ELECTRIC MOTOR			
N ./Bay	2		N ./Bay	2		
N autovariable/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 subvender finalization.						

