

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 IRIGAN ENERGY	
شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP								شماره صفحه: 1 از 5
	پروژه	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه		
	BK	GCS	PEDCO	120	ME	DT	0020	D04	

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP (P-2103 A/B)

نگهداشت و افزایش تولید میدان نفتی بینک

D04	SEP. 2022	AFC	H. Adineh	M.Fakharian	M. Mehrshad	
D03	APR.2022	AFC	H. Adineh	M.Fakharian	M. Mehrshad	
D02	MAR.2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D01	JAN.2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D00	NOV.2021	IFC	H. Adineh	M.Fakharian	M. Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2

CLIENT Doc. Number: F0Z-708851

status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

AFC: Approved For Construction

AFP: Approved For Purchase

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built –Approved

 NISOC شماره پیمان: 053-073-9184	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک		 شماره صفحه: 2 از 5					
	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP							
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0020	D04

REVISION RECORD SHEET

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4			x	x	x	68					
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شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP						شماره صفحه: 3 از 5	
	پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0020	D04

GENERAL NOTES	
D04	
1. For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010.	
2. Vendor shall fill in the blanks and return the completed data sheet along with Motor data sheet, "Doc. No.: BK-GCS-PEDCO-120-EL-DT-0008. with his proposal.	
3. Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.	
4. The motors, pump mechanical seal, pump coupling and pump accessories shall be supplied from the project's approved vendor list (A.V.L.). Chinese & Indian vendors are not acceptable for Mechanical seal , Electro motor and coupling subvendors.	
5. Vendor is requested to confirm the material, or propose appropriate alternative.	
6. Mechanical seal data sheet shall fill in by vendor as per API 682. Pump Manufacturer shall supply all instrumentation for mechanical seals as per API 682 4th Edition and project requirements.	
7. NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.	
8. The Tie-in flanges shall conform to B-16.5.	
9. Supplier to indicate which minimum flow pumps can achieve.	
10. Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of ISO 5199 latest edition.	
11. Pump starts with open delivery valve.	
12. Electrical motor shall be rated for site condition.	
13. The suction & discharge line diameters are 2".	
14. Material class of 'I-1', 'I-2', 'S-1', 'S-2', 'S-3', 'S-4', 'S-5', 'S-6', 'C-6', 'A-7' and 'A-8', which is defined in API 610 table H.1, shall be provided with full chemical analysis and mechanical test certification to BS EN 10204:2004 "3.1".	
Material class of 'D-1' and 'D-2', which is defined in API 610 table H.1 and also titanium materials shall be provided with full chemical analysis and mechanical test certification to BS EN 10204:2004 "3.2".	
15. Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD):	
Centrifugal Pump Package	
16. Pump material shall be selected based on Annex H API 610 11th Edition. (Vendor to confirm)	
17. If pump is self venting there is no need for vent .	
18. Ultrasonic Test shall be performed for forged shaft.	
19. For pumps with vacuum suction pressure the minimum NPSH margin shall be 2 m. for other pumps the minimum NPSH margin shall be 1 m.	
20. Couplings shall be dry, flexible and spacer type.	
21. Bearing temperature shall be measured during mechanical run test.	
22. Max. allow. sound press. level shall be 85 d BA.	
23. For site conditions refer to Process Basis of Design document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.	
24. For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No.BK-GNRAL-PEDCO-000-EL-SP-0010.	
25. Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.	
26. Allowable external forces and moments on nozzle should be conformed to Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004.	
27 Min. / Max. pumping temperature(°c) : 5 / 50	
28 Minimum design metal temperature (°c): 5	
29 Min./Max. Design Temperature (°C): 5 / 85	
30 Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of ISO 5199.	
31 Welding repair procedures shall be submitted for approval.	
32 Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0010".	
33 Max Allowable Pressure at Shut-Off at rated impeller (finalized by vendor) : 2.9 barg	
34 Min./Max. suction pressure (barg): 0.07 / 0.49	
35 Hydraulic power (kW): 0.3	

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شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP							شماره صفحه: 4 از 5	
053-073-9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	DT	0020		D04

ISO Std. 5199 CENTRIFUGAL PUMP DATA SHEET (SI UNIT)

Corporate name NISOC		Centrifugal pump Data sheet								Rev.:	
										Data:	
										Name:	
Plant: BINAK Gas Compressor Station						Service: Glycol Transfer Pump					
						Ref. Standards: ISO 5199, IPS-M-PM-115					
						Ref. Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004					
	No. req.	Pump type	Eq. API-610 Type	Mfr. serial No.	Kind of driver	Drive, type, size			Item No.		
Operation	1	Horizontal	OH2		Motor	LV Induction Electric Motor			P-2103 A/B		
Standby	1										
Drawings	Installation dimension				Pump weight		Pump Content				
	Assembly pump				Customer		Enquiry No.		Date		
	Assembly shaft seal						Order No.		Date		
	Piping	Auxiliary system				Supplier		Proposal No.		Date	
		Shaft seal						Contract No.		Date	
Test (3)	Material (16)	Hydrostatic	Inspection	Perform.	NPSH (7)	Sound Level	Final inspection	Approved documents			
Refer.	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199		
Witn. by	Certified	Witnessed	Witnessed	Witnessed	Witnessed	Witnessed	Certified	Certified			

Operating Condition (11)										
Liquid	Glycol (TEG)		Flow	rated	5.50	m³/h	NPSH at rated flow	Plant- NPSHA	9.9	m
Solids	Type	normal		5.00	m³/h	Pump- NPSH3			m	
	%of mass	min.			m³/h	Pump speed rated		rpm		
Corrosion by				Minimum flow required		m³/h	Pump efficiency rated		%	
Op. Temp. (Min/Max)	5 / 50 °C		Inlet gauge	rated		barg	Pump power input rated		kW	
pH-value at T _{op}			pressure	max.	0.49	barg	Pump power input	rated impeller dia.	kW	
Density at T _{nom}	1115 kg/m³		Outlet gage pressure rated		2.07	barg		max. impeller dia.	kW	
Vapour press. at T _{max}	0 bara		Differential pressure rated		2.00	bar	Electric. Driver power output rated (Note 25)		kW	
Kinematic vis. at T _{min}	85.86 cP		Total head rated		18.30	m	Steam turbine power output rated		kW	
Specific heat at T _{op}	J/Kg.K		Shut-off head (Note 33)			m	Performance curve No.			

Construction Features									
Design	Note 33	barg	Max. allowable work press	By vendor	barg	Cooling water condition	N.A.		
Number of Stages			Test pressure	1.5 x MAWP	barg	Cooling (C) Series (s)	N.A.		
Self priming	NO		Inlet Flange	Size/Position	2" / End	Heating (H), Parallel (p)	C	H	S
Impeller diameter	max	mm	Outlet Flange	Rating/facing (13)	-/150# / RF	Bearing			
	rated	mm		Size/Position	2" / Top	Seal Chamber			
	min	mm		Rating/facing (13)	-/150# / RF	Cooler for seal flush			
Pump length vertical pumps		mm	Vent connection (17)			Oil cooler			
Barrel dia. vertical pumps		mm	Drain connection		-/150# / RF	Flush		Liquid	Quantity
Casing split			Shaft seal manufacture			Lantern ring			
Casing seal type			Type, size (6)		Mechanical Seal	Mechanical ring			
Impeller type			Flush plan (VTC)		11	Gland/Seal plate			
Casing support			Material code			Coupling (20)	Manufacture		
Rotation(looking from driver)			Soft packing ring dimension				Type, Size		
Axial thrust reduction by			Rad. Bearing	Type			Diameter max		mm
Total clearance	Impeller	mm	Axial. Bearing	Size			Spacer length		mm
	Bal. Drum	mm	Line shaft bearing			Baseplate			
	Shaft bushes	mm	Bearing bracket No.			Anchor bolts supplied by		Vendor	
	Wear plate	mm	Lubrication			Driver	Supplied by	Vendor	
Wall thickness rot sheath / stat. cas			Lubrication device			Mounted by		Vendor	

Site and Utility Data (Notes 23,25)									
Location	Partial sides		Outdoor	Unheated	Site data:	Elevation	m	Barometer	mbar
Winterization REQ'D		Tropicalization REQ'D			Range of ambient temps: MIN/MAX		5/50 °C		
Unusual condition		Dust	Fumes	Others	Relative humidity: MIN/MAX		0/100 %		
Driver	Volt.	400	Hertz	50	Phase	3	Max Voltage Variation		± 5 %
Type of protection					Max Frequency Variation		± 2 %		
Temperature rise class / Insulation class					Max Volt. and Frequency Variation together		± 5 %		
Electric Area Classification					Starting Method		D.O.L./Open Discharge valve		

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شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP							شماره صفحه: 5 از 5																		
053-073-9184	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0020	نسخه D04																		
ISO Std. 5199 CENTRIFUGAL PUMP DATA SHEET (SI UNIT)																										
Material (VTC)																										
API class	S-8 (According to API-610) (5, 16)																									
Casing		Bearing bush		Mecan. Seal	Gland plate & gasket																					
Discharge casing		Balance disc-drum			Rotor ring	Inner/outer																				
Suction casing		Bal. counter disc-drum bus.			Static ring	Inner/outer																				
Stage casing		Contrain.shell / Stat.casing			Spring or bellow																					
Suction impeller		Rotor sheath / can			Seal metal parts																					
Impeller		Magnet material			Rotary & Static ring seats																					
Diffuser	N.A.	Barrel		Stuffing box	Gland Plate																					
Wear ring casing		Column pipe			Soft packing ring																					
Wear ring impeller		Bearing bracket			Lantern ring																					
Wear plate / lining		Motor stool		Shaft sleeve																						
Case bush		Coupling		Throat bush																						
Casing gaskets		Coupling guard		Paint	According to "Specification for Painting"; Doc. No. BK-																					
Shaft		Base plate			GNRAL-PEDCO-000-PI-SP-0006.																					
Remarks: For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0014.																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Customer</th> <th colspan="2" style="text-align: center;">Supplier</th> </tr> <tr> <td style="width: 25%;">Prepared (Data / Dep/ Signature)</td> <td style="width: 25%;">Checked (Data / Dep/ Sign.)</td> <td style="width: 25%;">Prepared (Data / Dep/ Signature)</td> <td style="width: 25%;">Checked (Data / Dep/ Sign.)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>											Customer		Supplier		Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)	Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)								
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