

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							
شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP						شماره صفحه: 1 از 5	
	پروژه	یسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0021	D04

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP
(P-2102)
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							
	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP		شماره صفحه: 2 از 5					
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0021	D04

REVISION RECORD SHEET

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1			x	x	x	65					
2			x	x	x	66					
3			x	x		67					
4			x	x		68					
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							
شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP							شماره صفحه: 3 از 5
	پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0021	D04

GENERAL NOTES
1. For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRL-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 m.
8. The Tie-in flanges shall conform to ASME B-16.5.
9. Vendor 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 close 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-GNRL-PEDCO-000-PR-DB-0001.
24. For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No.BK-GNRL-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 The elevation of pump centerline from ground is 76 cm.
34 Min./Max. suction pressure (barg): 0 / 0.10
35 Max Allowable Pressure at Shut-Off at rated impeller(barg) (finalized by vendor): 1.9
36 Hydraulic Power(kW): 0.1

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض								
شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL 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	0021		D04

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

Corporate name NISOC		Centrifugal pump Data sheet								Rev.:	
Plant: BINAK Gas Compressor Station		Service: Glycol Manual Pump								Data:	
		Ref. Standards: ISO 5199, IPS-M-PM-115								Name:	
		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-2102					
Standby											
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			
Witn. by	Certified	Witnessed	Witnessed	Witnessed	Witnessed	Witnessed	Certified	Certified			
Operating Condition (11)											
Liquid	Glycol (TEG)		Flow	rated	3.30	m³/h	NPSH at rated flow	Plant- NPSHA	9.3	m	
Solids	Type			normal	3.00	m³/h		Pump- NPSH3		m	
%of mass				min.		m³/h					
Corrosion by			Minimum flow required		m³/h	Pump speed rated		rpm			
Op. Temp. (Min/Max)	5 / 50	°C	Inlet gauge	rated	barg	Pump efficiency rated		%			
pH-value at T _{op}			pressure	max.	0.10	barg	Pump power input rated		kW		
Density at T _{norm}	1115	kg/m³	Outlet gage pressure rated		1.50	barg	Pump power input	rated impeller dia.	kW		
Vapour press. at T _{max}	0	bara	Differential pressure rated		1.50	bar	Electric. Driver power output rated (Note 25)	max. impeller dia.	kW		
Kinematic vis. at T _{min}	85.86	cP	Total head rated		13.70	m	Steam turbine power output rated		kW		
Specific heat at T _{op}			Shut-off head	(Note 35)		m	Performance curve No.				
Construction Features											
Design	(Note 35)	barg	Max. allowable work press	By vendor		barg	Cooling water condition	N.A.			
Number of Stages	1		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	ZONE 2 GROUP II A TEMP CLASS T4		Starting Method		D.O.L./Close Discharge valve						

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	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP							شماره صفحه: 5 از 5
شماره پیمان: 053-073-9184	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0021	

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

Material (VTA)									
API class	S-8 (According to API-610)	(5, 16)							
Casing		Bearing bush							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							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-GNRAL-PEDCO-000-PI-SP-0006.
Shaft		Base plate							

Remarks

For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0014.

Customer		Supplier	
Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)	Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)