

 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					
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
	D04	0021	DT	ME	120	PEDCO	GCS	BK

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04	page	D00	D01	D02	D03	D04
1			x	x	x	65					
2			x	x	x	66					
3			x	x		67					
4			x	x		68					
5			x			69					
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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 BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0021	نسخه 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 Design Conditions:								
Min./Max. Design Temperature (°C): 5 / 85 Design Pressure (barg): 1.9								
30 Welding repair procedures shall be submitted for approval.								
31 Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.: BK-GCS-PEDCO-120-ME-MR-0010".								
32 The elevation of pump centerline from ground is 76 cm.								
33 Min./Max. suction pressure (barg): 0 / 0.10								
34 Max Allowable Pressure at Shut-Off at rated impeller(barg) (finalized by vendor): 1.9								
35 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.:		
												Data:		
												Name:		
Plant:	BINAK Gas Compressor Station					Service:		Glycol Manual 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-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				
Withn. 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	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.	0.10 barg		Pump power input		rated impeller dia.	kW				
Density at T _{norm}	1115 kg/m³		Outlet gage pressure rated	1.50 barg		input		max. impeller dia.	kW					
Vapour press. at T _{max}	0 bara		Differential pressure rated	1.50 bar		Electric. Driver power output rated (Note 25)		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}	J/Kg.K		Shut-off head	(Note 34) m		Performance curve No.								
Construction Features														
Design	(Note 29) 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	P	Quantity
Impeller diameter	max	mm		Rating/facing (13)		-150# / RF		Bearing						
	rated	mm	Outlet Flange	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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شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP						شماره صفحه: 5 از 5	
053-073-9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک		
	BK	GCS	PEDCO	120	ME	DT	0021	D04

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.)