
 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض					 شرکت توسعه و پیمانکاری HIRGAN ENERGY TE			
شماره پیمان:		MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP							شماره صفحه: ۱ از ۵	
۰۵۳-۰۷۳-۹۱۸۴		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
		BK	GCS	PEDCO	120	ME	DT	0021		D05

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP

نگهداشت و افزایش تولید میدان نفتی بینک

D05	JUL. 2023	AFC	H. Adineh	M.Fakharian	A.M.Mohseni	
D04	DEC. 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: 1

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

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

۰۵۳-۰۷۳-۹۱۸۴

MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D05	0021	DT	ME	120	PEDCO	GCS	BK



شماره صفحه: ۲ از ۵

REVISION RECORD SHEET

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 <p>NISOC</p>	<p style="text-align: center;">نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p style="text-align: center;">احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>																															
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	<table border="1"> <thead> <tr> <th colspan="8">MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP</th> </tr> <tr> <th>نسخه</th> <th>سریال</th> <th>نوع مدرک</th> <th>رشته</th> <th>تجهیزات</th> <th>صادر کننده</th> <th>بسته کاری</th> <th>پروژه</th> </tr> </thead> <tbody> <tr> <td>D05</td> <td>0021</td> <td>DT</td> <td>ME</td> <td>120</td> <td>PEDCO</td> <td>GCS</td> <td>BK</td> </tr> </tbody> </table>							MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP								نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه	D05	0021	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: ۳ از ۵
MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP																																
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D05	0021	DT	ME	120	PEDCO	GCS	BK																									
<p style="text-align: center;">GENERAL NOTES</p>																																
<ol style="list-style-type: none"> For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010. 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. Vendor shall submit ITP (Inspection & Testing Plan) with his proposal. 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. Vendor is requested to confirm the material, or propose appropriate alternative. 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. NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1 m. The Tie-in flanges shall conform to ASME B-16.5. Vendor to indicate which minimum flow pumps can achieve. Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of ISO 5199 latest edition. Pump starts with close delivery valve. Electrical motor shall be rated for site condition. The suction & discharge line diameters are 2". 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". Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD): Centrifugal Pump Package Pump material shall be selected based on Annex H API 610 11th Edition. (Vendor to confirm) If pump is self venting there is no need for vent. Ultrasonic Test shall be performed for forged shaft. 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. Couplings shall be dry, flexible and spacer type. Bearing temperature shall be measured during mechanical run test. Max. allow. sound press. level shall be 85 d BA. For site conditions refer to Process Basis of Design document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001. For electrical motor descriptions, refer to 'Specification For LV induction Motors' 'Doc. No.BK-GNRAL-PEDCO-000-EL-SP-0010. Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet. Allowable external forces and moments on nozzle should be conformed to Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004. Min. / Max. pumping temperature(°c): 5 / 50 Minimum design metal temperature (°c): 5 Design Conditions: <div style="display: flex; justify-content: space-between;"> Min./Max. Design Temperature (°C): 5 / 85 Design Pressure (barg): 1.9 </div> Welding repair procedures shall be submitted for approval. Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0010". The elevation of pump centerline from ground is 76 cm. Min./Max. suction pressure (barg): 0 / 0.10 Max Allowable Pressure at Shut-Off at rated impeller(barg) (finalized by vendor): 1.9 Hydraulic Power(kW): 0.1 electrical motor shall be rated for the end of curve 																																

		<p>نگهداشت و افزایش تولید میدان نفتی بینک</p> <p>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>							
شماره پیمان:		MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP						شماره صفحه: ۴ از ۵	
۰۵۳-۰۷۳-۹۱۸۴		پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	PEDCO	120	ME	DT	0021	D05

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)		rated	3.30	m³/h	NPSH at rated flow	Plant- NPSHA	9.2	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 pressure	rated	barg	Pump power input rated			kW
pH-value at T _{op}	ISO 5199		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		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
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					Range of ambient temps: MIN/MAX				
Tropicalization REQ'D					Relative humidity: MIN/MAX				
Unusual condition	Dust	Fumes	Others		5/50 °C				
Driver	Volt.	400	Hertz	50	Phase	3	0/100 %		
Type of protection					Max Voltage Variation				
Temperature rise class / Insulation class					Max Frequency Variation				
Electric Area Classification	ZONE 2 GROUP II A TEMP CLASS T4				Max Volt. and Frequency Variation together				
					Starting Method				
					D.O.L./Close Discharge valve				

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احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMP

شماره صفحه: ۵ از ۵

• 03-073-9184

نسخه	سرمال	نوع مدرک	رشته	تهیهات	صادر کننده	بسته کاری	پروژه
D05	0021	DT	ME	120	PEDCO	GCS	BK

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

Material (VTA)						
API class	S-8	(According to API-610)	(5, 16)			
Casing			Bearing bush		Mecan. Seal	Gland plate & gasket
Discharge casing			Balance disc-drum			<div> <div>Rotor ring</div> <div>Inner/outer</div> </div>
Suction casing			Bal. counter disc-drum bus.			<div> <div>Static ring</div> <div>Inner/outer</div> </div>
Stage casing			Contrain.shell / Stat.casing			Spring or bellow
Suction impeller			Rotor sheath / can			Seal metal parts
Impeller			Magnet material			<div> <div>Rotary & Static ring seats</div> </div>
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-GNRL-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.)