

 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 TRANSFER PUMP			شماره صفحه: ۱ از ۵			
	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0020	نسخه D05

طرح نگهداشت و افزایش تولید ۲۷ مخزن

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

نگهداشت و افزایش تولید میدان نفتی بینک

D05	MAY. 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:

۰۵۳-۰۷۲-۹۱۸۴

MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP

نسخه	سریال	نوع مدرک	رشته	تهیه‌یلات	صادرکننده	بسته کاری	پروژه
D05	0020	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۵

REVISION RECORD SHEET

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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: ۰۵۳-۰۷۳-۹۱۸۴	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP							شماره صفحه: ۳ از ۵
	پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0020	D05

GENERAL NOTES

- For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRL-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.
- The Tie-in flanges shall conform to B-16.5.
- Supplier 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 open 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-GNRL-PEDCO-000-PR-DB-0001.
- For electrical motor descriptions, refer to 'Specification For LV induction Motors' 'Doc. No.BK-GNRL-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:
Min./Max. Design Temperature (°C): 5 / 85 Design Pressure (barg): 3.10
- 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.
- Max Allowable Pressure at Shut-Off : 3.10 barg
- Min./Max. suction pressure (barg): 0.07 / 0.49
- Hydraulic power (kW): 0.3
- electrical motor shall be rated for the end of curve



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شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP							شماره صفحه: ۴ از ۵
۰۵۳-۰۷۳-۹۱۸۴	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	PEDCO	120	ME	DT	0020	D05

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
Withn. by	Certified	Witnessed	Witnessed	Witnessed	Witnessed	Witnessed	Certified	Certified
Operating Condition (11)								
Liquid	Glycol (TEG)		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	rated impeller dia.	kW	
Density at T _{norm}	1115 kg/m³	Outlet gage pressure rated		2.07 barg	input	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 29 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		Rating/facing (13)	-/150# / RF	Bearing			
	rated		Size/Position	2" / Top	Seal Chamber			
	min		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		
		Axial. Bearing	Size			Spacer length		
Total clearance	Impeller	mm	Line shaft bearing		Baseplate			
	Bal. Drum	mm	Bearing bracket No.		Anchor bolts supplied by	Vendor		
	Shaft bushes	mm	Lubrication		Driver	Supplied by		
	Wear plate	mm	Lubrication device			Mounted by		
Wall thickness rot sheath / stat. cas						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			± 10%	
Type of protection				Max Frequency Variation			± 5%	
Temperature rise class / Insulation class				Max Volt. and Frequency Variation together			± 10%	
Electric Area Classification	ZONE 2	GROUP II A	TEMP CLASS T4	Starting Method			D.O.L./Open Discharge valve	

 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض							
شماره پیمان:		MECHANICAL DATA SHEETS FOR GLYCOL TRANSFER PUMP						شماره صفحه: ۵ از ۵	
۰۵۳-۰۷۳-۹۱۸۴		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک		
		BK	GCS	PEDCO	120	ME	DT	0020	D05
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-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.)		