



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 DIESEL PUMP

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0026	D06

شماره صفحه: ۱ از ۵

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR DIESEL PUMP
(P-2206)

نگهداشت و افزایش تولید میدان نفتی بینک

D06	JUN. 2023	AFC	H. Adineh	M.Fakharian	A.M.Mohseni	
D05	DEC. 2022	AFC	H. Adineh	M.Fakharian	M. Mehrshad	
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: 1 CLIENT Doc. Number: F0Z-708857

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



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شماره پیمان:

۰۵۳-۰۷۳-۹۱۸۴

MECHANICAL DATA SHEETS FOR DIESEL PUMP

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D06	0026	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۵

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04	D05
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نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

MECHANICAL DATA SHEETS FOR DIESEL PUMP



۰۵۳-۰۷۳-۹۱۸۴

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0026	D06

شماره صفحه: ۳ از ۵

GENERAL NOTES

- 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 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 as a 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 ASME 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 size is 2". Nozzles shall be in accordance with ASME B16.5
- 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.
- 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 flexible with spacer.
- 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.
- Vendor shall specify minimum flow for best pump selection.
- Pumping Temp. (Min. / Max.) (°C): 5 / 50
- Suction Pressure (Min/ Max.) (barg): 0 / 0.11
- Due to continuous minimum flow line by orifice, Pump rated flow = Rated process flow (5.5 m3/hr) + Pump min flow.
- Max Allowable Pressure at Shut-Off at rated impeller (barg): 2.1
- Hydraulic power (Kw): 0.3
- Minimum design metal temperature (°c): 5
- Design Temperature (°c): 5 / 85
- Differential pressure has been calculated by considering over design criteria for selected pump.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 شرکت توسعه و پارس HIRGAN ENERGY																		
	MECHANICAL DATA SHEETS FOR DIESEL PUMP																								
شماره پیمان:		<table border="1"> <tr> <td>نسخه</td> <td>سریال</td> <td>نوع مدرک</td> <td>رشته</td> <td>تسهیلات</td> <td>صادرکننده</td> <td>بسته کاری</td> <td>پروژه</td> </tr> <tr> <td>D06</td> <td>0026</td> <td>DT</td> <td>ME</td> <td>120</td> <td>PEDCO</td> <td>GCS</td> <td>BK</td> </tr> </table>						نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	D06	0026	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: ۴ از ۵	
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه																		
D06	0026	DT	ME	120	PEDCO	GCS	BK																		
۰۵۳-۰۷۳-۹۱۸۴																									

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

Corporate name		Centrifugal pump Data sheet								Rev.:			
NISOC										Data:			
Plant:		BINAK Gas Compressor Station								Name:			
		Service: Diesel Oil Pump											
		Ref. Standards: ISO 5199, IPS-M-PM-115											
		Ref. Spec. No. : BK-GCS-PEDCO-120-ME-SP-0004											
Operation	No. req.	Pump type	Eq. API-610 Type	Mfr. serial No.	Kind of driver	Drive, type, size	Item No.						
Standby	1	Horizontal	OH2		Motor	LV Induction Electric Motor	P-2206						
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	Complete Unit	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	Witnessed	Certified	Certified				
Operating Condition (11)													
Liquid	Type	Diesel Fuel Oil		Flow	rated (30)	5.5+min flow	m ³ /h	NPSH at rated flow	Plant- NPSHA	10	m		
Solids	%of mass			Flow	normal	5.00	m ³ /h	Pump speed rated	Pump- NPSH3		m		
Corrosion by			Minimum flow required		min.		m ³ /h	Pump efficiency rated			%		
Op. Temp. (Min./Max.)	5 / 50		°C	Inlet gauge pressure (29)	Min.	0.00	barg	Pump power input rated			kW		
pH-value at T _{op}				max.	0.11	barg		Pump power input	rated impeller dia.		kW		
Density at T _{normal}	850		kg/m ³	Outlet gage pressure rated		0.95	barg	input	max. impeller dia.		kW		
Vapour press. at T _{max}	Negligible		bara	Differential pressure rated (35)		2.00	bar	Electric. Driver power output rated (Note 25)			kW		
Kinematic vis. at T _{normal}	4.8		cP	Total head rated		24.00	m	Steam turbine power output rated			kW		
Specific heat at T _{op}			J/Kg.K	Shut-off head			m	Performance curve No.					
Construction Features													
Design			bara	Max. allowable work press		By vendor	bara	Cooling water condition	N.A.				
Number of Stages	1			Test pressure		1.5*MAWP	bara	Cooling (C) Series (s)	N.A.				
Self priming	NO			Inlet Flange	Size/Position	/ End		Heating (H), Parallel (p)	C	H	S	P	Quantity
Impeller diameter	max	mm		Outlet Flange	Rating/facing (13)	-/150# / RF		Bearing					
	rated	mm			Size/Position	/ 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 (VTA)		11		Gland/Seal plate			N.A.		
Casing support				Material code				Coupling (20)	Manufacture				
Rotation(looking from driver)				Soft packing ring dimension		N.A.			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	<input type="radio"/> Partial sides		<input checked="" type="radio"/> Outdoor	<input checked="" type="radio"/> Unheated		Site data:	Elevation	m	Barometer	mbar			
<input type="radio"/> Winterization REQ'D	<input type="radio"/> Tropicalization REQ'D		Range of ambient temps: MIN/MAX						5 / 50	°C			
Unusual condition	<input type="radio"/> Dust		<input type="radio"/> Fumes	<input type="radio"/> 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	Safe Area		Starting Method								D.O.L./Open Discharge valve		



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شماره صفحه: ۵ از ۵

۰۵۳-۰۷۳-۹۱۸۴

بروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0026	D06

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

Material (VTA)

API class	S-1 (According to API-610)	(5, 16)
Casing		Bearing bush
Discharge casing		Balance disc-drum
Suction casing		Bal. counter disc-drum bus.
Stage casing		Contrain.shell / Stat.casing
Suction impeller		Rotor sheath / can
Impeller		Magnet material
Diffuser	N.A.	Barrel
Wear ring casing		Column pipe
Wear ring impeller		Bearing bracket
Wear plate / lining		Motor stool
Case bush		Coupling
Casing gaskets		Coupling guard
Shaft		Base plate

Remarks

For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0023.

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