

 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 FLARE KO DRUM PUMP (API 610)								شماره صفحه: 1 از 10
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	DT	0024	D04	

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMP (P-2201 A/B)

نگهداشت و افزایش تولید میدان نفتی بینک

D04	NOV. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D03	APR. 2022	IFA	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-708855
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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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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							
	MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMP (API 610)						شماره صفحه: 2 از 10	
شماره پیمان: 053 - 073 - 9184	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT		

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04	page	D00	D01	D02	D03	D04
1	x	x	x	x	x	65					
2	x	x	x	x	x	66					
3	x	x	x	x	x	67					
4	x					68					
5	x	x	x	x	x	69					
6	x	x	x	x	x	70					
7	x					71					
8	x	x			x	72					
9	x	x			x	73					
10						74					
11						75					
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64						128					

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک																									
شماره پیمان: 053 – 073 – 9184	<table><tr><th colspan="8">MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMPS (API 610)</th></tr><tr><th>نسخه</th><th>سریال</th><th>نوع مدرک</th><th>رشته</th><th>تسهیلات</th><th>صادر کننده</th><th>بسته کاری</th><th>پروژه</th></tr><tr><td>D04</td><td>0024</td><td>DT</td><td>ME</td><td>120</td><td>PEDCO</td><td>GCS</td><td>BK</td></tr></table>	MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMPS (API 610)								نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه	D04	0024	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: 3 از 10
MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMPS (API 610)																										
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه																			
D04	0024	DT	ME	120	PEDCO	GCS	BK																			

GENERAL NOTES	
	D04
1	Mass Density [kg/m3] at Min. / Norm / Max. Temp: 1022 / 980 / 852
2	Viscosity [cP] At Min. / Normal / Max. Temp: 1.5 / 0.46 / 1.03
3	Suction & Discharge line diameters are 2".
4	Mechanical Seal data sheet shall be filled in by vendor as per API 682, 4th edition.
5	A drain line to be considered in barrel and to be pipe up to mounted skid. Pump drain shall be terminated at skid edge with flange connection and valved. Valves in the piping system shall be Welded Flanged type.
6	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".
7	PMI Testing for Alloy Steel Shall be Done.
8	If NPSH margin be less than 1m, NPSH test Shall be Done.
9	API Plan 31-53B shall be considered. (vendor to confirm)
10	Design Condition: (Min./Max.) Design Temperature(°C): 5 / 85 Design Pressure(barg): 9
11	Temperature finalize after depressurizing study.
12	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.
13	Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.
14	Vendor is requested to confirm the material, or propose appropriate alternative.
15	The Tie-in flanges shall conform to ASME B-16.5.
16	Vendor to indicate which minimum flow pumps can achieve.
17	Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of API 610 11th edition.
18	Welding repair procedures shall be submitted for approval.
19	If pump is self venting there is no need for vent.
20	Ultrasonic Test shall be performed for forged shaft.
21	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.
22	Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0009"
23	Bearing temperature shall be measured during mechanical run test.
24	For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010. and 'Specification for MV induction motors' Doc.No. BK-GNRAL-PEDCO-000-EL-SP-0017.
25	Electrical motor shall be rated for the end of curve.
26	For site conditions refer to Process Basis of Design Document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.
27	Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.
28	Allowable external forces and moments on nozzle are equal to two times of table 5 of API 610-11th edition.
29	The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRAL-PEDCO-000-PI-SP-0008
30	Range of Amb.Temp. : Min. ambient temperature: 5 °C , Max. ambient temperature: 50 °C.
31	Coupling shall be flexible with spacer and coupling guard shall be of Non-Spark type.
32	elevation of pump centerline from ground is 76 cm.
33	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.
34	Max Allowable Pressure at Shut-Off(barg) : 9
35	Barometric pressure in Binak new GCS; winter: 14.37 psia summer: 13.26 psia
36	Barrel and pump shall have the same MAWP and to be hydrotest in same value with pump.



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 FLARE KO DRUM PUMP (API 610)

نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D04	0024	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: 4 از 10

API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 1 of 6)

CLIENT: National Iranian South Oil Company (NISOC)

PROJECT TITLE: BINAK New Compressor Gas Station

JOB NUMBER:

EQUIPMENT NUMBER: P-2201A/B

EQUIPMENT SERVICE: FLARE KO DRUM PUMPS

SERIAL NUMBER:

REQ. / SPEC NO. : BK-GCS-PEDCO-120-ME-SP-0003

PURCH ORDER NO.

- Cells coloured thus
- contain drop-down options
 - contain calculated values based on input data; do not change.
 - identify a cross referenced paragraph in the document note, and may also contain a drop down list

When you have completed the DS, highlight the whole page format cells pattern none
Delete these notes on completion

COMMENTS:

PUMP
MOTOR
GEAR
TURBINE

DATA SHEETS					
ITEM No.	ATT	ITEM No.	ATT	ITEM No.	ATT
P-2201 A		P-2201 B			

 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 FLARE KO DRUM PUMP (API 610)	شماره صفحه: 10 از 15
D04		
API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 2 of 6)		

APPLICABLE TO: PROPOSAL FOR: NISOC SITE: BINAK Gas Compressor Station NO. REQ: 2 operating MANUFACTURER:	APPLICABLE NTL/INTNTL STANDARD: API 610 - 11th Edition, IPS-G-PM-105 UNIT: SERVICE: TYPE: Vertical MODEL: VS6 (VTC) No. STAGES: V.T.A SERIAL NO.:
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LIQUID CHARACTERISTICS					
Units	Maximum	Minimum	Note		
LIQUID TYPE OR NAME :	HC			Max & min values refer only to the property listed	SERVICE : • IF INTERMITTENT NO. OF STARTS : PUMPS OPERATE IN: CORROSION DUE TO : (6.12.1.9) EROSION DUE TO : (6.12.1.9) H2S CONCENTRATION (ppm) : (6.12.1.12) CHLORIDE CONCENTRATION (ppm) : PARTICULATE SIZE (DIA IN MICRONS) PARTICULATE CONCENTRATION (PPM) SOUR SERVICE:
VAPOR PRESSURE :	1				
DENSITY : (Note 1)	kg/m ³				
SPECIFIC HEAT :	kj/kgC				
VISCOSITY : (Note 2)	cP				
OPERATING CONDITIONS (6.1.2)					
Units	Maximum	Rated	Normal	Min	
NPSH _A Datum:	C.L. Impeller				
PUMPING TEMPERATURE :	°C		5(worse case)		
FLOW :	m ³ /hr		2.20	2.00	
DISCHARGE PRESSURE:	barg		1.6		
SUCTION PRESSURE :	barg	0.6			0.1
DIFFERENTIAL PRESSURE :	bar		1.5		
DIFFERENTIAL HEAD :	m		15.6		
NPSH _A :	m		1		
HYDRAULIC POWER:	KW		0.1		

SITE AND UTILITY DATA																																										
LOCATION: OUTDOOR UNHEATED MOUNTED AT : ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE 1 GROUP II B TEMP CLASS T3 SITE DATA : ELEVATION (MSL) : 12.5 m BAROMETER : (Note 35) mBar RANGE OF DESIGN TEMPS:MIN / MAX 5 85 °C RELATIVE HUMIDITY: MIN / MAX 0 100 % (@ 25.6 °C) UNUSUAL CONDITIONS: UTILITY CONDITIONS : <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>ELECTRICITY :</th> <th>DRIVERS</th> <th>HEATING</th> <th>CONTROL</th> <th>SHUTDOWN</th> </tr> <tr> <td>VOLTAGE</td> <td style="text-align: center;">400</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PHASE</td> <td style="text-align: center;">3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>HERTZ</td> <td style="text-align: center;">50</td> <td></td> <td></td> <td></td> </tr> </table>	ELECTRICITY :	DRIVERS	HEATING	CONTROL	SHUTDOWN	VOLTAGE	400				PHASE	3				HERTZ	50				COOLING WATER : <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>RETURN</th> <th>DESIGN</th> </tr> <tr> <td>TEMP</td> <td></td> <td></td> </tr> <tr> <td>PRESS.</td> <td></td> <td></td> </tr> <tr> <td>SOURCE</td> <td></td> <td></td> </tr> </table> COOLING WATER CHLORIDE CONCENTRATION: INSTRUMENT AIR : kg MIN kg STEAM <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>DRIVERS</th> <th>HEATING</th> </tr> <tr> <td>TEMP</td> <td></td> <td></td> </tr> <tr> <td>PRESS.</td> <td></td> <td></td> </tr> </table>		RETURN	DESIGN	TEMP			PRESS.			SOURCE				DRIVERS	HEATING	TEMP			PRESS.		
ELECTRICITY :	DRIVERS	HEATING	CONTROL	SHUTDOWN																																						
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	DRIVERS	HEATING																																								
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PERFORMANCE	DRIVER (7.1.5) (Note 27)
PROPOSAL CURVE NO. _____ RPM _____ As Tested Curve No. _____ IMPELLER DIA.: _____ MAX. _____ MIN. _____ mm RATED POWER _____ Kw EFFICIENCY _____ (%) RATED CURVE BEP FLOW (at rated impeller dia) _____ m ³ /hr MIN FLOW : _____ kJ/Nm ³ _____ m ³ /hr PREFERRED OPERATING REGION (6.1.11) _____ to _____ m ³ /hr ALLOWABLE OPERATING REGION _____ to _____ m ³ /hr MAX HEAD @ RATED IMPELLER _____ m MAX POWER @ RATED IMPELLER _____ kW NPSH ₃ AT RATED FLOW : _____ m CL PUMP TO U/S BASEPLATE _____ m NPSH MARGIN AT RATED FLOW : _____ m SPECIFIC SPEED (6.1.9) _____ SUCTION SPECIFIC SPEED LIMIT _____ SUCTION SPECIFIC SPEED _____ MAX. ALLOW. SOUND PRESS. LEVEL REQD (6.1.14) 85.00 (dBA) EST MAX SOUND PRESS. LEVEL _____ (dBA) MAX. SOUND POWER LEVEL REQD (6.1.14) _____ EST MAX SOUND POWER LEVEL _____	Driver Type MOTOR GEAR NO VARIABLE SPEED REQUIRED NO SOURCE OF VARIABLE SPEED _____ OTHER _____ MANUFACTURER _____ NAMEPLATE POWER AND POWER FACTOR @Site Condition _____ KW Nominal RPM _____ RATED LOAD RPM _____ FRAME OR MODEL _____ ORIENTATION HORIZONTAL LUBE _____ BEARING TYPE: _____ RADIAL _____ THRUST _____ STARTING METHOD D.O.L/ Open Discharge Valve INSULATION/TEMP. RISE F/B Max Voltage Variation ±5% Max Frequency Variation ±2% Max Voltage and Frequency Variation together ±5%

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نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه											
D04	0024	DT	ME	120	PEDCO	GCS	BK											
D04 API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 3 of 6)																		

CONSTRUCTION																																																	
API PUMP TYPE: VS6 [Based on API 610 definitions] NOZZLE CONNECTIONS: (6.5.5) (Notes 3,28) <table><tr><th>Size</th><th>Facing</th><th>Rating</th><th>Position</th></tr><tr><td></td><td>RF</td><td>300</td><td>SIDE</td></tr><tr><td></td><td>RF</td><td>300</td><td>SIDE</td></tr></table> SUCTION DISCHARGE PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2) <table><tr><th>No.</th><th>Size</th><th>Type</th><th>Facing</th><th>Rating</th><th>Posn.</th></tr><tr><td></td><td></td><td></td><td>RF</td><td>300</td><td></td></tr><tr><td></td><td></td><td></td><td>RF</td><td>300</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> BAL./LEAK OFF DRAIN VENT PRESSURE GAGE TEMP GAGE WARM-UP LINE Drain Valve Supplied By VENDOR DRAINS MANIFOLDED VENDOR VENT Valve Supplied By VENDOR VENTS MANIFOLDED YES THREAD, CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2) SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3) CYLINDRICAL THREADS REQUIRED (6.4.3.8) GUSSET SUPPORT REQUIRED YES If Needed MACHINED AND STUDDED CONNECTIONS (6.4.3.12) VS 6 DRAIN DRAIN TO SKID EDGE YES	Size	Facing	Rating	Position		RF	300	SIDE		RF	300	SIDE	No.	Size	Type	Facing	Rating	Posn.				RF	300					RF	300																				CASING MOUNTING: CASING TYPE: (6.3.10) OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6) CASE PRESSURE RATING: (Note 36) MAWP : (6.3.5) 40 barg @ °C HYDROTEST : 1.5*MAWP barg @ °C HYDROTEST OH PUMP AS ASSEMBLY YES SUCT'N PRESS. REGIONS DESIGNED FOR MAWP YES ROTATION: (VIEWED FROM COUPLING END) • IMPELLERS INDIVIDUALLY SECURED : YES • BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION : • PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS ROTOR: SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3) First Critical Speed Wet (Multi stage pumps only) COMPONENT BALANCE TO ISO 1940 G1.0 SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3) COUPLING: (7.2.3) (7.2.13.f) MANUFACTURER MODEL RATING (POWER/100 RPM) SPACER LENGTH mm SERVICE FACTOR min 1.5 RIGID (Note 31) NO COUPLING WITH HYDRAULIC FIT (7.2.10) COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3) YES COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11) COUPLING IN COMPLIANCE WITH (7.2.4) API 610 compliant COUPLING GUARD STANDARD PER (7.2.13.a) ISO 14120 Window on Coupling Guard
Size	Facing	Rating	Position																																														
	RF	300	SIDE																																														
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No.	Size	Type	Facing	Rating	Posn.																																												
			RF	300																																													
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MATERIAL (6.12.1.1) APPENDIX H CLASS S-6 (VTC) MIN DESIGN METAL TEMP (6.12.4.1) 5 °C REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.12.1) YES (Note 29) Applicable Hardness Standard (6.12.1.12.3) BARREL : CASE : DIFFUSERS IMPELLER : IMPELLER WEAR RING : CASE WEAR RING : SHAFT: Bowl (if VS-type) Inspection Class Level 2																																																	
BEARINGS AND LUBRICATION (6.10.1.1) BEARING (TYPE / NUMBER): (6.11.4) RADIAL / THRUST / REVIEW AND APPROVE THRUST BEARING SIZE : (9.2.5.2.4) LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) FLOOD PRESSURE LUBE SYSTEM TO ISO 10438- (9.2.6.5) ISO 10438 DATA SHEETS ATTACHED Pressurized Lube Oil System mtd on pump baseplate Location of Pressurized Lube Oil System mounted on baseplate : INTERCONNECTING PIPING PROVIDED BY VENDOR OIL VISC. ISO GRADE VG CONSTANT LEVEL OILER : REQUIRED																																																	
BASEPLATE API BASEPLATE NUMBER : BASEPLATE CONSTRUCTION (7.3.14) BASEPLATE DRAINAGE (7.3.1) Entire Baseplate Drain Pan MOUNTING : NON-GROUT CONSTRUCTION : (7.3.13) VERTICAL LEVELING SCREWS : REQUIRED LONGITUDINAL DRIVER POSITIONING SCREWS : REQUIRED SUPPLIED WITH : GROUT AND VENT HOLES YES DRAIN CONNECTION YES MOUNTING PADS SIZED FOR BASEPLATE LEVELING (7.3.5) MOUNTING PADS TO BE MACHINED (7.3.6) PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET OTHER REMARKS :																																																	

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	شماره پیمان: 053 - 073 - 9184							
MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMP (API 610)								
پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0024	نسخه D04	

API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 4 of 6)

INSTRUMENTATION	SEAL SUPPORT SYSTEM MOUNTING
SEE ATTACHED API-670 DATA SHEET	SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE
ACCELEROMETER (7.4.2.1)	(7.5.1.4)
Number of Accelerometers	IDENTIFY LOCATION ON BASEPLATE
Mounting Location of Accelerometers	INTERCONNECTING PIPING BY VENDOR
PROVISION FOR MTG ONLY (6.10.2.10)	MECHANICAL SEAL (6.8.1) (VTS)
Number of Accelerometers	SEE ATTACHED ISO 21049/API 682 DATA SHEET (Note 4)
Mounting Location of Accelerometers	ADDITIONAL CENTRAL FLUSH PORT (6.8.9)
FLAT SURFACE REQUIRED (6.10.2.11) YES	HEATING JACKET REQ'D. (6.8.11)
Number of Accelerometers	FLUSH PLAN 31+53B
Mounting Location of Accelerometers	HEATING AND COOLING (6.1.17) (VTS)
VIBRATION PROBES (7.4.2.2)	COOLING REQ'D
PROVISIONS FOR VIB. PROBES	COOLING WATER PIPING PLAN
NUMBER PER RADIAL BEARING	COOLING WATER PIPING
NUMBER PER AXIAL BEARING	FITTINGS
MONITORS AND CABLES SUPPLIED BY (7.4.2.4)	COOLING WATER PIPING MATERIALS
TEMPERATURE (7.4.2.3)	COOLING WATER REQUIREMENTS:
PROVISIONS FOR TEMP PROBES	TOTAL COOLING WATER
RADIAL BEARING TEMP.	HEATING MEDIUM
NUMBER PER RADIAL BEARING	OTHER
THRUST BEARING TEMP.	HEATING PIPING
NUMBER PER THRUST BEARING ACTIVE SIDE	PIPING & APPURTENANCES
NUMBER PER THRUST BEARING INACTIVE SIDE	MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6)
TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6)	VENT YES
PRESSURE GAUGE TYPE	DRAIN YES
Remarks	VALVES YES (NOTE 5)
	COOLING WATER YES
	TAG ALL ORIFICES (7.5.2.4) YES
	SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)

 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 FLARE KO DRUM PUMP (API 610)	شماره صفحه: 10 از 10																
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">پروژه</td> <td style="width:10%;">بسته کاری</td> <td style="width:10%;">صادر کننده</td> <td style="width:10%;">تسهیلات</td> <td style="width:10%;">رشته</td> <td style="width:10%;">نوع مدرک</td> <td style="width:10%;">سریال</td> <td style="width:10%;">نسخه</td> </tr> <tr> <td>BK</td> <td>GCS</td> <td>PEDCO</td> <td>120</td> <td>ME</td> <td>DT</td> <td>0024</td> <td>D04</td> </tr> </table>	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	GCS	PEDCO	120	ME	DT	0024	D04	
پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه											
BK	GCS	PEDCO	120	ME	DT	0024	D04											

SURFACE PREPARATION AND PAINT	TEST
MANUFACTURER'S STANDARD	SHOP INSPECTION (8.1.1) Yes
OTHER (SEE BELOW) YES	PERFORMANCE CURVE
SPECIFICATION NO. BK-GNRL-PEDCO-000-PI-SP-0012 "Specification for Painting"	& DATA APPROVAL PRIOR TO SHIPMENT. YES
PUMP:	TEST WITH SUBSTITUTE SEAL (8.3.3.2.b) NO
PUMP SURFACE PREPARATION BY VENDOR	MATERIAL CERTIFICATION REQUIRED YES
PRIMER BY VENDOR	CASING (6.12.1.8) IMPELLER YES
FINISH COAT BY VENDOR	OTHER YES (Casing and Impeller Wear ring) NOTE 6
BASEPLATE:	CASTING REPAIR WELD PROCEDURE APPR REQD YES
BASEPLATE SURFACE PREPARATION BY VENDOR	INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d)
PRIMER: BY VENDOR	LIQUID PENETRANT YES MAG PARTICLE YES
FINISH COAT BY VENDOR	ULTRASONIC RADIOGRAPHY
DETAILS OF LIFTING DEVICES	INSPECTION REQUIRED FOR CASTINGS
SHIPMENT: (8.4.1) EXPORT	LIQUID PENETRANT MAG PARTICLE
EXPORT BOXING REQUIRED YES	ULTRASONIC RADIOGRAPHY
OUTDOOR STORAGE MORE THAN 6 MONTHS YES	HARDNESS TEST REQUIRED (8.2.2.7)
	ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3)
	FOR
	METHOD
ROTOR STORAGE ORIENTATION (9.2.8.2)	
SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3)	
N ₂ PURGE (9.2.8.4)	PMI TESTING REQUIRED (8.2.2.8) (NOTE 7) YES
SPARE PARTS	COMPONENTS TO BE TESTED
START-UP YES	RESIDUAL UNBALANCE TEST (J.4.1.2)
NORMAL MAINTENANCE YES	NOTIFICATION OF SUCCESSFUL SHOP
	PERFORMANCE TEST (8.1.1.c) (8.3.3.5) YES
	BASEPLATE TEST (7.3.21)
	HYDROSTATIC WIT
	HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2) WIT
	PERFORMANCE TEST WIT
	TEST IN COMPLIANCE WITH (8.3.3.2) 8.3.3.2
	TEST DATA POINTS TO (8.3.3.3) 8.3.3.3
	TEST TOLERANCES TO (8.3.3.4)
	NPSH (8.3.4.3.1) (8.3.4.3.4) (NOTE 8) WIT
	NPSH-1ST STG ONLY (8.3.4.3.2)
	NPSH TESTING TO HI 1.6 OR ISO 9906 (8.3.4.3.3)
	TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.6)
	RETEST ON SEAL LEAKAGE (8.3.3.2.d)
	RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b)
	COMPLETE UNIT TEST (8.3.4.4.1)
	SOUND LEVEL TEST (8.3.4.5) WIT
	CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6) NON-WIT
	LOCATION OF CLEANLINESS INSPECTION
	NOZZLE LOAD TEST
	CHECK FOR CO-PLANAR MOUNTING PAD SURFACES
	MECHANICAL RUN TEST UNTIL OIL TEMP STABLE
	4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1) WIT
	4 HR. MECH RUN TEST (8.3.4.2.2) WIT
	BRG HSG RESONANCE TEST (8.3.4.7)
	STRUCTURAL RESONANCE TEST (9.3.9.2)
	REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST
	(9.2.7.5)
	AUXILIARY EQUIPMENT TEST (8.3.4.6)
	EQUIPMENT TO BE INCLUDED IN AUXILIARY TESTS
	LOCATION OF AUXILIARY EQUIPMENT TEST
	IMPACT TEST PER EN 13445
	PER ASME SECTION VIII
	REMOVE CASING AFTER TEST

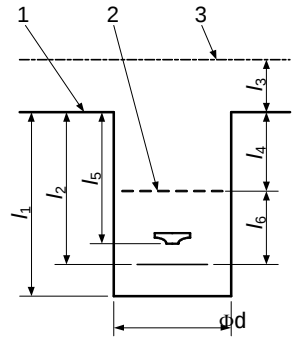
ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL

OTHER PURCHASER REQUIREMENTS	
COORDINATION MEETING REQUIRED (10.1.3)	YES
MAXIMUM DISCHARGE PRESSURE TO INCLUDE	
MAX RELATIVE DENSITY	YES
OPERATION TO TRIP SPEED	
MAX DIA. IMPELLERS AND/OR NO OF STAGES	YES
CONNECTION DESIGN APPROVAL (9.2.1.4)	
TORSIONAL ANALYSIS / REPORT (6.9.2.10)	
PROGRESS REPORTS	
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5)	
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1)	
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3)	
MODAL ANALYSIS REQUIRED (9.3.9.2)	
DYNAMIC BALANCE ROTOR (6.9.4.4)	
INSTALLATION LIST IN PROPOSAL (10.2.3.i)	YES
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3)	
TRANSIENT TORSIONAL RESPONSE	
BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6)	YES
IGNITION HAZARD ASSMT TO EN 13463-1 (7.2.13.e)	
CASING RETIREMENT THICKNESS DRAWING (10.3.2.3)	
FLANGES RQD IN PLACE OF SKT WELD UNIONS (7.5.2.8)	YES
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3)	
CONNECTION BOLTING (7.5.1.7)	SS
CADMIUM PLATED BOLTS PROHIBITED	
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)	YES
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)	YES
SUBMIT INSPECTION CHECK LIST (8.1.5)	YES

 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 FLARE KO DRUM PUMP (API 610) پروژه: BK بسته کاری: GCS صادر کننده: PEDCO تجهیزات: 120 رشته: ME نوع مدرک: DT سریال: 0024 نسخه: D04	شماره صفحه: 10 از 19

API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 6 of 6)

1	Note	VERTICAL TYPE (FIG 1.1)	VS6	Rev
2	REMARKS	For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0020		
3				
4				
5				
6		VERTICAL PUMPS		VERTICAL PUMPS (CONT'D)
7		PUMP THRUST:	(+) UP (-) DOWN	LINE SHAFT:
8		STATIC THRUST	_____ N _____ N	LINE SHAFT DIAMETER _____ mm
9		AT MIN FLOW	_____ N _____ N	TUBE DIAMETER _____ mm
10		AT RATED FLOW	_____ N _____ N	LINE SHAFT COUPLING:
11		AT MAX FLOW	_____ N _____ N	LINESHAFT CONNECTION _____
12		MAX THRUST	_____ N _____ N	
13		SOLEPLATE REQUIRED	_____	• SUCTION STRAINER TYPE _____
14		SOLEPLATE Length x Width	_____ m X _____ m	• LEVEL CONTROL _____
15		SOLEPLATE THICKNESS	_____ mm	IMPELLER COLLETS ACCEPTABLE _____
16		MOUNTING FLANGE REQUIRED	_____	HARDENED SLEEVES UNDER BEARINGS (9.3.10.5) _____
17		COLUMN PIPE:		RESONANCE TEST _____
18		DIAMETER	_____ mm	STRUCTURAL ANALYSIS (9.3.5) _____
19		LENGTH	_____ m	
20		NUMBER	_____	DRIVER ALIGNMENT SCREWS _____
21		SPACING	_____ m	SUCTION CAN
22		GUIDE BUSHINGS:		SUCTION CAN _____ THICKNESS _____ mm
23		NUMBER	_____	LENGTH _____ m
24		LINE SHAFT BEARING SPACING	_____ mm	DIAMETER _____ mm
25		GUIDE BUSHING LUBE:	_____	
26				
27				
28		MATERIALS (additional)		
29		SUCTION CAN / BARREL:	_____	LINESHAFT SLEEVES : _____
30		DISCHARGE HEAD :	• _____	BEARING RETAINER : _____
31		BOWL SHAFT :	_____	SHAFT ENCLOSING TUBE : _____
32		LINESHAFT :	_____	DISCHARGE COLUMN : _____
33		LINESHAFT HARDFACING :	_____	PRESSURE RATING: _____
34		BELLMOUTH :	_____	MAWP _____ HYDRO _____
35		BOWL BEARING :	_____	HEAD _____
36		LINESHAFT BEARING :	_____	COLUMN PIPE _____
37				BOWL _____
38		SUMP ARRANGEMENT		
39		SUMP DIMENSIONS :		
40		GRADE ELEVATION	1 _____ m	
41		LOW LIQUID LEVEL	2 _____ m	
42		C.L. OF DISCHARGE	3 _____ m	
43		SUMP DEPTH	l_1 _____ m	
44		PUMP LENGTH	l_2 _____ m	
45		GRADE TO DISCH.	l_3 _____ m	
46		GRADE TO LOW LIQUID LVL	l_4 _____ m	
47		GRADE TO 1ST STG IMPL'R.	l_5 _____ m	
48		SUBMERGENCE REQ'D	l_6 _____ m	
49		SUMP DIAMETER	Φd _____ m	
50				
51				
52				
53				
54				
55				
56				





احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



053 - 073 - 9184

MECHANICAL DATA SHEETS FOR FLARE KO DRUM PUMP (API 610)

شماره صفحه: 10 از 10

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0024	DT	ME	120	PEDCO	GCS	BK

API Std. 610 CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2201 A/B (Sheet 6 of 6)

PRESSURE VESSEL DESIGN CODE REFERENCES

THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER
CASTING FACTORS USED IN DESIGN (TABLE 3)
SOURCE OF MATERIAL PROPERTIES

WELDING AND REPAIRS

THESE REFERENCES MUST BE LISTED BY THE PURCHASER. (DEFAULT TO TABLE 11 IF NO PURCHASER PREFERENCE IS STATED)

ALTERNATE WELDING CODES AND STANDARDS

WELDING REQUIREMENT (APPLICABLE CODE OR STANDARD)

WELDER/OPERATOR QUALIFICATION

WELDING PROCEDURE QUALIFICATION

NON-PRESSURE RETAINING STRUCTURAL WELDING SUCH AS BASEPLATES OR SUPPORTS

MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION OF PLATE EDGES

POSTWELD HEAT TREATMENT

POSTWELD HEAT TREATMENT OF CASING FABRICATION WELDS

REQUIRED

REQUIRED

MATERIAL INSPECTION

THESE REFERENCES MUST BE LISTED BY THE PURCHASER

DEFAULT TO TABLE 14

YES

ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)

TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS
RADIOGRAPHY			
ULTRASONIC INSPECTION			
MAGNETIC PARTICLE INSPECTION			
LIQUID PENETRANT INSPECTION			
VISUAL INSPECTION (all surfaces)			

REMARKS:

For P&ID refer to "BK-GCS-PEDCO-120-PR-PI-0020"

