طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR FIRE WATER MAIN PUMPS-DIESEL ENGINE DRIVEN (P-2301 B)

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D02	JUL. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D01	APR. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D00	FEB. 2022	IFC	H. Adineh	M. Fakharian	M. Mehrshad	

Class: 2 CLIENT Doc. Number: F0Z-708861

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

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04
1	x	x	x		
2	x	x	x		
3	x	x	x		
4	x				
5	x	x	x		
6	x	x	x		
7	x				
8	x				
9	x				
10	x	x	x		
11	x		x		
12	x		x		
13	x	x			
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					

page	D00	D01	D02	D03	D04
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0030	D02

GENERAL NOTES

D02

1 Vendor shall fill in the blanks and return the completed data sheet along with Diesel data sheet with his proposal.

2 Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.

3 Vendor is requested to confirm the material, or propose appropriate alternative.

4 For Instrumentation, Project specification 'Specification For Instrument and Control of package Unit System (PU)' Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0004. shall be followed.

5 Instead of mechanical seal, vendor shall advise the suitable Packing specification.

6 NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.

7 The Tie-in flanges shall conform to ASME B-16.1.

8 Pump drain shall be terminated at skid edge with flange connection and valved.

9 Supplier to indicate which minimum flow pumps can achieve.

10 Nozzle loads shall be 2 times the loads shown in API 610 11th Edition.

11 The Suction line size is 12" and discharge line is 10" .

12 Air release valve shall be considered by vendor .

13 As the pump jobsite environmental condition is fumy and dusty, any required protection for pumps, panels and electrical parts (in accordance with IPS-E-EL-100) in this regard shall be considered by pump manufacturer.

14 Ultrasonic Test shall be performed for forged shaft.

15 Couplings shall be dry, flexible and spacer type.

16 A local control panel shall be considered by vendor to be located next to the pumps as per "Specification For Fire Water Pumps", Doc. No. BK-GCS-PEDCO-120-ME-SP-0005'. Alarm and trip shall be specified for diesel control based on NFPA 20.

17 Pump LCP shall be designed to manage all required monitoring and control signals , as minimum in accordance with "P&ID For Fire Water Network", Doc.No.BK-GCS-PEDCO-120-SA-PI-0001.

18 The electrical characteristics of panels shall be specified by vendor such as: - The power demand of control panel. - The number of control panel.

19 Fuel daily tank shall be sized for 8 hours and all instruments such as level transmitter with HH/LL Alarm and etc. are in vendor's scope of supply.

20 Diesel engine shall be tested at 110% rated speed in mechanical running test also the maximum speed of diesel engines shall be 2300 RPM.

21 pressure sensing lines are in the vendor's scope of supply.

22 The sparate power & control panels for main pump diesel engine shall be considered by vendor. Therefore required single line, wiring diagram and etc. shall be specified by vendor.

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 1 of 6)

CLIENT: National Iranian South Oil Company (NISOC)

PROJECT TITLE: BINAK Gas Compressor Station

JOB NUMBER:

EQUIPMENT NUMBER: P-2301 B

EQUIPMENT SERVICE: Fire Water Pumps - Diesel Engine Driven

SERIAL NUMBER:

REQ. / SPEC NO. : BK-GCS-PEDCO-120-ME-SP-0005

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:

	DATA SHEETS					
	ITEM No.	ATT	ITEM No.	ATT	ITEM No.	ATT
PUMP	P-2301 B	YES				
MOTOR						
GEAR						
TURBINE						

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 FIRE WATER PUMPS-DIESEL ENGINE DRIVEN

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0030	D02

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 2 of 6)

APPLICABLE TO: PROPOSAL
FOR: NISOC
SITE: BINAK Gas Compressor Station
NO. REQ: 1 PUMP SIZE:
MANUFACTURER:

APPLICABLE NTL/INTNTL STANDARD: NFPA20 (2019) & IPS-M-PM-125
UNIT:
SERVICE: Fire Water Pumps - Diesel Engine Driven
TYPE: No. STAGES:
MODEL: BB1 (V.T.C) SERIAL NO.:

LIQUID CHARACTERISTICS

	Units	Maximum	Minimum	Note
LIQUID TYPE OR NAME :		Water		Max & min
VAPOR PRESSURE :	bara	0.0087	0.1219	values refer
DENSITY :	kg/m³	997		only to the
SPECIFIC HEAT :	kj/kgC	4.186		property
VISCOSITY :	cP	1		listed

D02

OPERATING CONDITIONS (6.1.2)

	Units	Maximum	Rated	Normal	Min
$NPSH_A$ Datum:		C.L. Impeller			
PUMPING TEMPERATURE :	°C	50			5
FLOW :	m³/hr		454.20		
DISCHARGE PRESSURE :(6.3.2)	barg		10.8		
SUCTION PRESSURE :	barg	0.95	0.73		0.10
DIFFERENTIAL PRESSURE :	bar		9.9		
DIFFERENTIAL HEAD :	m		101.2		
$NPSH_A$:	m		6.9		
HYDRAULIC POWER:	KW		124.88		

SERVICE : INTERMITTENT
• 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) N.A.
CHLORIDE CONCENTRATION (ppm) :
PARTICULATE SIZE (DIA IN MICRONS)
PARTICULATE CONCENTRATION (PPM)

SITE AND UTILITY DATA

LOCATION: OUTDOOR UNHEATED UNDER ROOF
MOUNTED AT : ● TROPICALISATION REQ'D
ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE SAFE
GROUP TEMP CLASS
SITE DATA :
ELEVATION (MSL) : 12.5 m BAROMETER : 990.77 mBar
RANGE OF DESIGN TEMPS:MIN / MAX 5 85 °C
RELATIVE HUMIDITY: MIN / MAX 0 100 % (@ 25.6 °C)
UNUSUAL CONDITIONS: NA
UTILITY CONDITIONS :

ELECTRICITY :	AUXILIARY	HEATING	CONTROL	SHUTDOWN
VOLTAGE	400			
PHASE	3			
HERTZ	50			

COOLING WATER :

	RETURN	DESIGN
TEMP		
PRESS.		

SOURCE
COOLING WATER CHLORIDE CONCENTRATION:
INSTRUMENT AIR : kg MIN kg
STEAM

	DRIVERS	HEATING
TEMP		
PRESS.		

D02

PERFORMANCE

PROPOSAL CURVE NO.	RPM		
As Tested Curve No.			
IMPELLER DIA.: RATED	MAX.	MIN.	mm
RATED POWER Kw	EFFICIENCY		(%)
RATED CURVE BEP FLOW (at rated impeller dia)			m³/hr
MIN FLOW : kJ/Nm³			m³/hr
PREFERRED OPERATING REGION (6.1.11)	to		m³/hr
ALLOWABLE OPERATING REGION	to		m³/hr
MAX HEAD @ RATED IMPELLER			m
MAX POWER @ RATED IMPELLER			kW
NPSH3 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)		110 (dBA)	@ 1 m
EST MAX SOUND PRESS. LEVEL		(dBA)	
MAX. SOUND POWER LEVEL REQ'D (6.1.14)			
EST MAX SOUND POWER LEVEL			

DRIVER (7.1.5) (NOTE 22)

Driver Type		DIESEL ENGINE
GEAR		NO
VARIABLE SPEED REQUIRED		NO
SOURCE OF VARIABLE SPEED		
OTHER		
MANUFACTURER		
NAMEPLATE POWER	@Site Condition	KW
Nominal RPM		
RATED LOAD RPM		
FRAME OR MODEL		
ORIENTATION		HORIZONTAL
LUBE		
RADIAL		/
THRUST		/
STARTING METHOD		
SEE DRIVER DATA SHEET		
Max Voltage Variation		
Max Frequency Variation		
Max Voltage and Frequency Variation together		

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

HIRGAN ENERGY

شماره پیمان: 053-073-9184

MECHANICAL DATA SHEETS FOR FIRE WATER PUMPS-DIESEL ENGINE DRIVEN

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0030	D02

شماره صفحه: 6 از 13

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 3 of 6)

CONSTRUCTION

API PUMP TYPE: BB1 **[Based on API 610 definitions]**

NOZZLE CONNECTIONS: (6.5.5) NOTES 7,11

	Size	Facing	Rating	Position
SUCTION		RF	150	SIDE
DISCHARGE		RF	150	SIDE

PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2)

	No.	Size	Type	Facing	Rating	Posn.
BAL./LEAK OFF						
DRAIN						
VENT						
PRESSURE GAGE						
TEMP GAGE						
WARM-UP LINE						

Drain Valve Supplied By	SUPPLIER	
DRAINS MANIFOLDED	YES	
VENT Valve Supplied By	SUPPLIER	
VENTS MANIFOLDED	YES	
THREAD. CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2)	NO	
SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3)	NO	
CYLINDRICAL THREADS REQUIRED (6.4.3.8)	NO	
GUSSET SUPPORT REQUIRED	YES	If Needed
MACHINED AND STUDDED CONNECTIONS (6.4.3.12)	NO	
VS 6 DRAIN	N/A	
DRAIN TO SKID EDGE	YES	

CASING MOUNTING:

CASING TYPE: (6.3.10)

OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6)

D02

CASE PRESSURE RATING:

MAWP :	(6.3.5)	By vendor	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 :	
• 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	NO
SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3)	
COUPLING:(7.2.3) **(7.2.13.f)** NOTE 16	
MANUFACTURER	
MODEL	
RATING (POWER/100 RPM)	
SPACER LENGTH	mm
SERVICE FACTOR	Min 1.5
RIGID	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 671
COUPLING GUARD STANDARD PER (7.2.13.a)	ISO 14120
Window on Coupling Guard	

MATERIAL (6.12.1.1)

APPENDIX H CLASS	I-2	NOTES 3	
MIN DESIGN METAL TEMP (6.12.4.1)	5		°C
REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.12.1)			
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 Note 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)

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 Supplier

OIL VISC. ISO GRADE VG

CONSTANT LEVEL OILER :

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)	YES
MOUNTING PADS TO BE MACHINED (7.3.6)	YES
PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET	YES
OTHER	

REMARKS :

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 4 of 6)

INSTRUMENTATION

SEE ATTACHED API-670 DATA SHEET		
ACCELEROMETER (7.4.2.1)		
Number of Accelerometers		
Mounting Location of Accelerometers		
PROVISION FOR MTG ONLY	(6.10.2.10)	YES
Number of Accelerometers		
Mounting Location of Accelerometers		
FLAT SURFACE REQUIRED	(6.10.2.11)	N / A
Number of Accelerometers		
Mounting Location of Accelerometers		
VIBRATION PROBES (7.4.2.2)		N / A
PROVISIONS FOR VIB. PROBES		
NUMBER PER RADIAL BEARING		
NUMBER PER AXIAL BEARING		
MONITORS AND CABLES SUPPLIED BY (7.4.2.4)		
TEMPERATURE (7.4.2.3)		
PROVISIONS FOR TEMP PROBES		
RADIAL BEARING TEMP.		
NUMBER PER RADIAL BEARING		
THRUST BEARING TEMP.		
NUMBER PER THRUST BEARING ACTIVE SIDE		
NUMBER PER THRUST BEARING INACTIVE SIDE		
TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6)		
PRESSURE GAUGE TYPE		

Remarks

SEAL SUPPORT SYSTEM MOUNTING

SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE	(7.5.1.4)	
IDENTIFY LOCATION ON BASEPLATE		
INTERCONNECTING PIPING BY		Supplier

MECHANICAL SEAL (6.8.1)

SEE ATTACHED ISO 21049/API 682 DATA SHEET		N / A	NOTE 5
ADDITIONAL CENTRAL FLUSH PORT	(6.8.9)		
HEATING JACKET REQ'D.	(6.8.11)	N / A	
FLUSH PLAN			

HEATING AND COOLING (6.1.17)

COOLING REQ'D		NO
COOLING WATER PIPING PLAN		
COOLING WATER PIPING		
FITTINGS		
COOLING WATER PIPING MATERIALS		
COOLING WATER REQUIREMENTS:		
TOTAL COOLING WATER		
HEATING MEDIUM		
OTHER		
HEATING PIPING		

PIPING & APPURTENANCES

MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6)	
VENT	YES
DRAIN	YES
VALVES	YES (NOTE 8)
COOLING WATER	NO
TAG ALL ORIFICES (7.5.2.4)	YES
SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)	

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) -P-2301 B (Sheet 5 of 6)

SURFACE PREPARATION AND PAINT

MANUFACTURER'S STANDARD	
OTHER (SEE BELOW)	
SPECIFICATION NO.	BK-GNRAL-PEDCO-000-PI-SP-0006, "Specification for Painting"
PUMP:	
PUMP SURFACE PREPARATION	
PRIMER	AS PER PROJECT PAINTING SPEC.
FINISH COAT	AS PER PROJECT PAINTING SPEC.
BASEPLATE:	
BASEPLATE SURFACE PREPARATION	
PRIMER:	AS PER PROJECT PAINTING SPEC.
FINISH COAT	AS PER PROJECT PAINTING SPEC.
DETAILS OF LIFTING DEVICES	
SHIPMENT: (8.4.1)	EXPORT
EXPORT BOXING REQUIRED	YES
OUTDOOR STORAGE MORE THAN 6 MONTHS	YES
SPARE ROTOR ASSEMBLY PACKAGED FOR:	
ROTOR STORAGE ORIENTATION (9.2.8.2)	
SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3)	
N_2 PURGE (9.2.8.4)	
SPARE PARTS	
START-UP	YES
NORMAL MAINTENANCE	YES

ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL

OTHER PURCHASER REQUIREMENTS

COORDINATION MEETING REQUIRED (10.1.3)	YES
MAXIMUM DISCHARGE PRESSURE TO INCLUDE	
OPERATION TO TRIP SPEED	
MAX DIA. IMPELLERS AND/OR NO OF STAGES	YES
CONNECTION DESIGN APPROVAL (9.2.1.4)	YES
TORSIONAL ANALYSIS / REPORT (6.9.2.10)	NO
PROGRESS REPORTS	YES
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5)	
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1)	
	YES
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3)	NO
MODAL ANALYSIS REQUIRED (9.3.9.2)	
DYNAMIC BALANCE ROTOR (6.9.4.4)	YES
INSTALLATION LIST IN PROPOSAL (10.2.3.l)	YES
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3)	NO
TRANSIENT TORSIONAL RESPONSE	NO
BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6)	
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)	
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3)	
CONNECTION BOLTING (7.5.1.7)	
CADMIUM PLATED BOLTS PROHIBITED	
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)	
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)	YES
SUBMIT INSPECTION CHECK LIST (8.1.5) NOTE 2	YES

TEST

SHOP INSPECTION (8.1.1)			Yes
PERFORMANCE CURVE & DATA APPROVAL PRIOR TO SHIPMENT.			YES
TEST WITH SUBSTITUTE SEAL (8.3.3.2.b)			
MATERIAL CERTIFICATION REQUIRED		CASING	YES
SHAFT	YES (6.12.1.8)	IMPELLER	YES
OTHER	YES Casing and impeller Wear ring		
CASTING REPAIR WELD PROCEDURE APPR REQD			YES
INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d)			
LIQUID PENETRANT	YES	MAG PARTICLE	
ULTRASONIC		RADIOGRAPHY	YES
INSPECTION REQUIRED FOR CASTINGS			
LIQUID PENETRANT	YES	MAG PARTICLE	YES
ULTRASONIC	YES	RADIOGRAPHY	
HARDNESS TEST REQUIRED (8.2.2.7)			
ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3)			
		FOR	
		METHOD	
PMI TESTING REQUIRED (8.2.2.8)			
COMPONENTS TO BE TESTED			
RESIDUAL UNBALANCE TEST (J.4.1.2)			
NOTIFICATION OF SUCCESSFUL SHOP			YES
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)			
PERFORMANCE TEST			WIT
TEST IN COMPLIANCE WITH (8.3.3.2)			NFPA 20
TEST DATA POINTS TO (8.3.3.3)			NFPA 20
TEST TOLERANCES TO (8.3.3.4)			TABLE 16
NPSH (8.3.4.3.1) (8.3.4.3.4)	NOTE 6		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)			OBSERVE
RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b)			
COMPLETE UNIT TEST (8.3.4.4.1)			WIT
SOUND LEVEL TEST (8.3.4.5)			WIT
CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6)			OBSERVE
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)			
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			

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 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 (NOTE 12)

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)	DEFAULT PER TABLE 11
WELDER/OPERATOR QUALIFICATION	DEFAULT PER TABLE 11
WELDING PROCEDURE QUALIFICATION	DEFAULT PER TABLE 11
NON-PRESSURE RETAINING STRUCTURAL WELDING SUCH AS BASEPLATES OR SUPPORTS	DEFAULT PER TABLE 11
MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION OF PLATE EDGES	DEFAULT PER TABLE 11
POSTWELD HEAT TREATMENT	DEFAULT PER TABLE 11
POSTWELD HEAT TREATMENT OF CASING FABRICATION WELDS	DEFAULT PER TABLE 11

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 :

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 FIRE WATER PUMPS-DIESEL ENGINE DRIVEN	شماره صفحه: 10 از 13

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0030	D02

Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (1 of 4)

SERVICE:	Fire Water Pumps - Diesel Engine Driven	MANUFACTURER:	
FOR:	NISOC	MODEL NO:	
SITE:	BINAK Gas Compressor Station	TYPE:	
NO. REQUIRED:	1		

			(Note 1)	REMARKS
OPERATING CONDITIONS				
DIESEL ENGINE MANUFACTURER				
ISO POWER (ISO 3046)	kW			
ISO SPEED	rpm			
SITE CONTINUOUS RATED POWER	kW			
SITE CONTINUOUS RATED SPEED	rpm			
OVERLOAD SITE POWER	kW			
OVERLOAD SPEED	rpm			
OVERLOAD DURATION	h			
DIRECTION OF ROTATION (FROM CPLG)	CW/CCW			
SPEED RANGE	±% rpm			
IDLE SPEED	rpm			
LOADING TIME	s			
PERFORMANCE				
% OF MAX CONT SITE POWER				
FUEL SPECIFIC CONSUMPTION	g/kWh			
TOLERANCE	%			
SPEED	rpm (NOTE 20)	D02		
LOAD ACCEPTANCE RATING	% 1 step			
ENGINE DATA				
CYCLE:- 2 STROKE/4 STROKE				4 STROKE REQUIRED
NUMBER OF CYLINDERS				
IN-LINE/V FORM				
BORE/STROKE	mm			
CAPACITY	liters			
BMEP (RATED)				
PISTON SPEED	m/s			
COOLING SYSTEM: AIR/WATER				CLOSED SYSTEM (Air fan & Radiator)
TURBOCHARGER:-				
SINGLE OR SERIES				
INTERCOOLER	CA or CW			
EMISSIONS				
No_x EMISSION	g/kWh			IPS-E-SF-860
CO EMISSION	g/kWh			
CO_2 EMISSION	g/kWh			
STARTING SYSTEM				
AIR:-				
NUMBER OF TANKS				
PRESSURE	Barg / Kpag			
CAPACITY	m^3			
NO. OF STARTS W/OUT REFILLING				
STARTING SYSTEM				
ELECTRICAL:-				YES
NO. OF BATTERIES				2 Cell (VTC)
TYPE				Lead-Acid (VTC)
TOTAL CAPACITY	Ah			
STARTING CIRCUIT				
STARTING MOTOR				

Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (2 of 4)

HYDRAULIC:-		
ACCUMULATOR/MOTOR		
NO OF STARTS PER 5 SEC CRANKS		
NO OF ACCUMULATORS		
BARRING SYSTEM		
MANUAL/ELEC/HYDRAULIC IF REQ'D		MANUAL
LUBRICATION		
DRY SUMP		
SYSTEM;- PRESSURE	bar g / Kpa g	
OIL QUANTITY		
OIL CONSUMPTION	g/kwh	
PUMPS	Main/Aux	
OIL FILTER:-		
CHANGE OVER WHILE RUNNING	Reqd y/n	
INLET SYSTEM		
FILTER:-		TWO STAGE
TYPE	Wet or dry	
NUMBER		
AIR CUT OFF SYSTEM ("RIG SAVER")		YES
EXHAUST SYSTEM		
ENGINE PIPE OUTLET		YES
SPARK ARRESTOR		YES
SILENCER	dBA @1m	YES - 85
EXPANSION JOINT		YES
EXHAUST MANIFOLD	Cooling	PERSONNEL PROTECTION
FUEL		
MAX STATIC HEAD ABOVE FUEL INLET		
FILTER CLEANABLE WHILE RUNNING	Y/N	YES
SELF CLEANING	Y/N	YES
CHANGEOVER WHILE RUNNING	Y/N	YES
HEAT EMISSIONS		
TO COOLING SYSTEM	kW	
TO AMBIENT	kW	
SITE AND INSTALLATION DATA		
ALTITUDE	m	
AMBIENT TEMPERATURE MIN/MAX	°C	5 / 50
DESIGN TEMPERATURE	°C	52
HUMIDITY	%	0 / 100
WIND SPEED	km/h	
ATMOSPHERIC AIR (DUST/FUMES)		
CORROSION BY		
LOCATION:- INDOOR/OUTDOOR		OUTDOOR

D02

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک	HIRGAN ENERGY

شماره پیمان: 053-073-9184

MECHANICAL DATA SHEETS FOR FIRE WATER PUMPS-DIESEL ENGINE DRIVEN

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0030	D02

Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (3 of 4)

HEATED / UNHEATED			UNHEATED
UNDER ROOF / PARTIAL SIDES			UNDER ROOF
AREA CLASSIFICATION			
STARTING:- LOCAL / REMOTE			
AVAILABLE UTILITIES			
COOLING WATER:-			FROM FIRE WATER PUMP DISCHARGE
PRESSURE	bar g / kPa g		
AVAILABLE PRESSURE DROP	bar / kPa		
TEMPERATURE	°C		
TEMPERATURE CHANGE	°C		
INSTRUMENT AIR:-			
PRESSURE	bar g / kPa g		
TEMPERATURE	°C		
DEW POINT	°C		
ELECTRICITY SUPPLY	AC		
	DC		
FUEL CHARACTERISTICS:-			
FUEL OIL CLASSIFICATION			
VISCOSITY	cP		
TEMPERATURE	°C		
OPERATING DURATION	hrs		
IMPURITIES	% weight		
FUEL SYSTEM			
DAY TANK REQUIRED (NOTE 19)	D02		YES
TANK SUPPLIED BY			ENGINE SUPPLIER
CAPACITY	hrs		AS PER NFPA 20
LOCATION			OFF-SKID
WEIGHTS AND DIMENSIONS			
HEAVIEST PART FOR ERECTION			
HEAVIEST PART FOR MAINTENANCE			
WEIGHT OF ENGINE ONLY			
WEIGHT OF SET			
WEIGHT OF CONTROL PANEL			
HEIGHT UNDER HOOK			
DIMENSIONS FOR MAINTENANCE			
PAINTING			
STANDARD/OTHER			IPS-E-TP-100
INSPECTION AND TESTING			
MANUFACTURER'S STANDARD			
OTHER			IPS-M-PM-290

INSTRUMENTATION	ALARM	SHUTDOWN	IPS-M-PM-290 SECTION 6.8.
LUBRICATING OIL PRESSURE			Remark: P&ID For Fire Water Network
FUEL PRESSURE			(No.BK-GCS-PEDCO-120-SA-PI-0001.)
ENGINE OIL TEMPERATURE			shall be followed.
FUEL TEMPERATURE			
OVER SPEED			
DIFF PRESS SWITCH ON FILTER			
MANOMETER ON OIL CIRCUIT;			
DOWNSTREAM OF PUMP			
DOWNSTREAM OF FILTER			
SIGHT GLASSES ON OIL CIRCUIT			

Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (4 of 4)

ENGINE EXHAUST TURBOCHARGER		
	TE BEFORE/ AFTER COOLER	PI BEFORE/ AFTER COOLER
CIRCUIT OF:		
RAW WATER	/	/
FRESH WATER	/	/
OIL	/	/
SUPERCHARGING:		
AIRSIDE	/	/
WATERSIDE	/	/

REMARKS:

For each pump set one 400V, 3PH/N auxiliary feeder is delivered by purchaser.

All required power for local control panel (230VAC/110VAC/24VDC) shall be convert by vendor as request.