



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض
خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک
(قرارداد ۰۰۲۳-۰۰۵۳-۰۰۰۱۸۴-BK-HD-GCS-CO)



شماره پیمان:

۰۵۳-۰۷۳-۹۱۸۴

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

نسخه	سریال	نوع مدرک	رشته	تهیلات	صادر کننده	بسته کاری	پروژه
V01	0001	DS	ME	120	KP	GCS	BK

شماره صفحه: ۱ از ۱۴

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

نگهداشت و افزایش تولید میدان نفتی بینک

V01	JAN-2025	IFA	Kalaye Pump	M.Fakharian	S.Faramarzpour	
V00	Nov-2024	IFA	Kalaye Pump	M.Fakharian	M.Sadeghian	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

status:

IFI: Issued For Information

IFA: Issued For Approval

AFC: Approved For Construction



NISOC

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V01	0001	DS	ME	120	KP	GCS	BK

شماره صفحه: ۱۴ از ۲

REVISION RECORD SHEET

page	V00	V01	V02	V03	V04	V05	V06
1	x	x					
2	x	x					
3	x						
4	x						
5	x	x					
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 <p>NISOC</p>	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳_۰۰-BK-HD-GCS-CO)</p>							
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۳
	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدارک	سریال	نسخه
	BK	GCS	KP	120	ME	DS	0001	V01

GENERAL NOTES	
1 Vendor shall fill in the blanks and return the completed data sheet along with Diesel data sheet with his proposal.	KPC : Confirmed
2 Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.	KPC : Confirmed
3 Vendor is requested to confirm the material, or propose appropriate alternative.	KPC : Confirmed
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.	KPC : Confirmed
5 Instead of mechanical seal, vendor shall advise the suitable Packing specification.	KPC : Packing is confirmed
6 NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.	KPC : Confirmed
7 The Tie-in flanges shall conform to ASME B-16.1.	KPC : Confirmed
8 Pump drain shall be terminated at skid edge with flange connection and valved.	KPC : Confirmed
9 Supplier to indicate which minimum flow pumps can achieve.	KPC : Confirmed
10 Nozzle loads shall be 2 times the loads shown in API 610 11th Edition.	KPC : Confirmed
11 The Suction line size is 12" and discharge line is 10" .	KPC : Confirmed
12 Air release valve shall be considered by vendor .	KPC : Pump is self vent
13 As the pump jobsite environmental condition is fummy 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.	KPC : Confirmed
14 Ultrasonic Test shall be performed for forged shaft.	KPC : Confirmed
15 Couplings shall be dry, flexible and spacer type.	KPC : Confirmed
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.	KPC : Confirmed
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.	KPC : Confirmed
18 The electrical characteristics of panels shall be specified by vendor such as: - The power demand of control panel. - The number of control panel.	KPC : Confirmed
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.	KPC : Confirmed
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.	KPC : Confirmed
21 pressure sensing lines are in the vendor's scope of supply.	KPC : Confirmed
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.	KPC : Confirmed
23 Design pressure is 15.4 barg also as per NFPA 20 standard the hydrotest pressure shall not be less than 17.24 barg.	KPC : Confirmed
24 Estimated BHP at rated capacity is 199.2 kW by considering 65% efficiency.	KPC : Confirmed
25 The pumps shall furnish not less than 150% of rated capacity at not less than 65% of rated head.	KPC : Confirmed



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(قرارداد ۰۰۲۳۰۰-BK-HD-GCS-CO)



• 03-073-9144

شماره پیمان:

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

شماره صفحه: ۴ از ۱۴

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:

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



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(قرارداد BK-HD-GCS-CO-۰۰۲۳۰۰)



شماره پیمان:

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

• 03-073-9184

شماره صفحه: ۵ از ۱۴

صادر کننده	تهیهات	رشته	نوع مدرک	سریال
KP	120	ME	DS	000

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

APPLICABLE TO: PROPOSAL		APPLICABLE NTL/INTNTL STANDARD: NFPA20 (2019) & IPS-M-PM-125	
FOR	NISOC	UNIT	
SITE	BINAK Gas Compressor Station	SERVICE	Fire Water Pumps - Diesel Engine Driven
NO. REQ	1	TYPE	BB1 No. STAGES 1
MANUFACTURER	KALAYE PUMP CO.	MODEL	BB1 (V.T.C) KPSPE 150-570 SERIAL NO.
	PUMP SIZE 8"x6"		

LIQUID CHARACTERISTICS

	Units	Maximum	Minimum	Note	SERVICE :	INTERMITTENT
LIQUID TYPE OR NAME :	Water			Max & min values refer only to the property listed	• IF INTERMITTENT NO. OF STARTS :	
VAPOR PRESSURE :	bara	0.0087	0.1219		PUMPS OPERATE IN:	
DENSITY :	kg/m³	997			CORROSION DUE TO : (6.12.1.9)	
SPECIFIC HEAT :	kJ/kgC	4.186			EROSION DUE TO : (6.12.1.9)	
VISCOSITY :	cP	1			H2S CONCENTRATION (ppm) : (6.12.1.12)	N.A.
OPERATING CONDITIONS (6.1.2)					CHLORIDE CONCENTRATION (ppm) :	
	Units	Maximum	Rated	Normal	Min	PARTICULATE SIZE (DIA IN MICRONS)
NPSH _A Datum:		C.L. Impeller				PARTICULATE CONCENTRATION (PPM)
PUMPING TEMPERATURE :	°C	50			5	
FLOW :	m³/hr		454.20			
DISCHARGE PRESSURE (6.3.2)	barg		10.4			
SUCTION PRESSURE :	barg	0.83	0.81		0.08	
DIFFERENTIAL PRESSURE :	bar		10.3			
DIFFERENTIAL HEAD :	m		105.0			
NPSH _A :	m		8.8			
HYDRAULIC POWER:	KW		129.50			

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 :

TEMP

PRESS.

SOURCE

COOLING WATER CHLORIDE CONCENTRATION:

RETURN

DESIGN

INSTRUMENT AIR :

kg

MIN

kg

STEAM

DRIVERS



HEATING


TEMP




PRESS.




PERFORMANCE




DRIVER (7.1.5) (NOTE 22)



PROPOSAL CURVE NO.				KPSPF 150-570		RPM		1490		Driver Type		DIESEL ENGINE		
As Tested Curve No.								KPSPF 150-570		GEAR		NO		
IMPELLER DIA.:	RATED	530	MAX.	585	MIN.	450	mm			VARIABLE SPEED REQUIRED		NO		
RATED POWER		180.5 Kw		EFFICIENCY		72	(%)			SOURCE OF VARIABLE SPEED				
RATED CURVE BEP FLOW (at rated impeller dia)						489	m³/hr			OTHER				
MIN FLOW :						15	m³/hr			MANUFACTURER		VOLVO		
PREFERRED OPERATING REGION (6.1.11)				342	to	681	m³/hr			NAMEPLATE POWER		@Site Condition	308 KW	
ALLOWABLE OPERATING REGION				146	to	681	m³/hr			Nominal RPM		1490		
MAX HEAD @ RATED IMPELLER						120	m			RATED LOAD RPM				
MAX POWER @ RATED IMPELLER						241	kW			FRAME OR MODEL			TADI341GE	
NPSH3 AT RATED FLOW :						3.5	m			ORIENTATION		HORIZONTAL		
CL PUMP TO U/S BASEPLATE							m			LUBE				
NPSH MARGIN AT RATED FLOW :						5.3	m							
SPECIFIC SPEED (6.1.9)														
SUCTION SPECIFIC SPEED LIMIT						867								
SUCTION SPECIFIC SPEED						8498								
MAX. ALLOW. SOUND PRESS. LEVEL REQD (6.1.14)						110	(dBA)	@ 1 m						
EST MAX SOUND PRESS. LEVEL							(dBA)							
MAX. SOUND POWER LEVEL REQD (6.1.14)														
EST MAX SOUND POWER LEVEL														

Driver Type		DIESEL ENGINE	
GEAR		NO	
VARIABLE SPEED REQUIRED		NO	
SOURCE OF VARIABLE SPEED			
OTHER			
MANUFACTURER		VOLVO	
NAMEPLATE POWER		@Site Condition	308 KW
Nominal RPM		1490	
RATED LOAD RPM			
FRAME OR MODEL			TADI341GE
ORIENTATION		HORIZONTAL	
LUBE			
RADIAL		/	
THRUST		/	
STARTING METHOD			
SEE DRIVER DATA SHEET			
Max Voltage Variation			
Max Frequency Variation			
Max Voltage and Frequency Variation together			

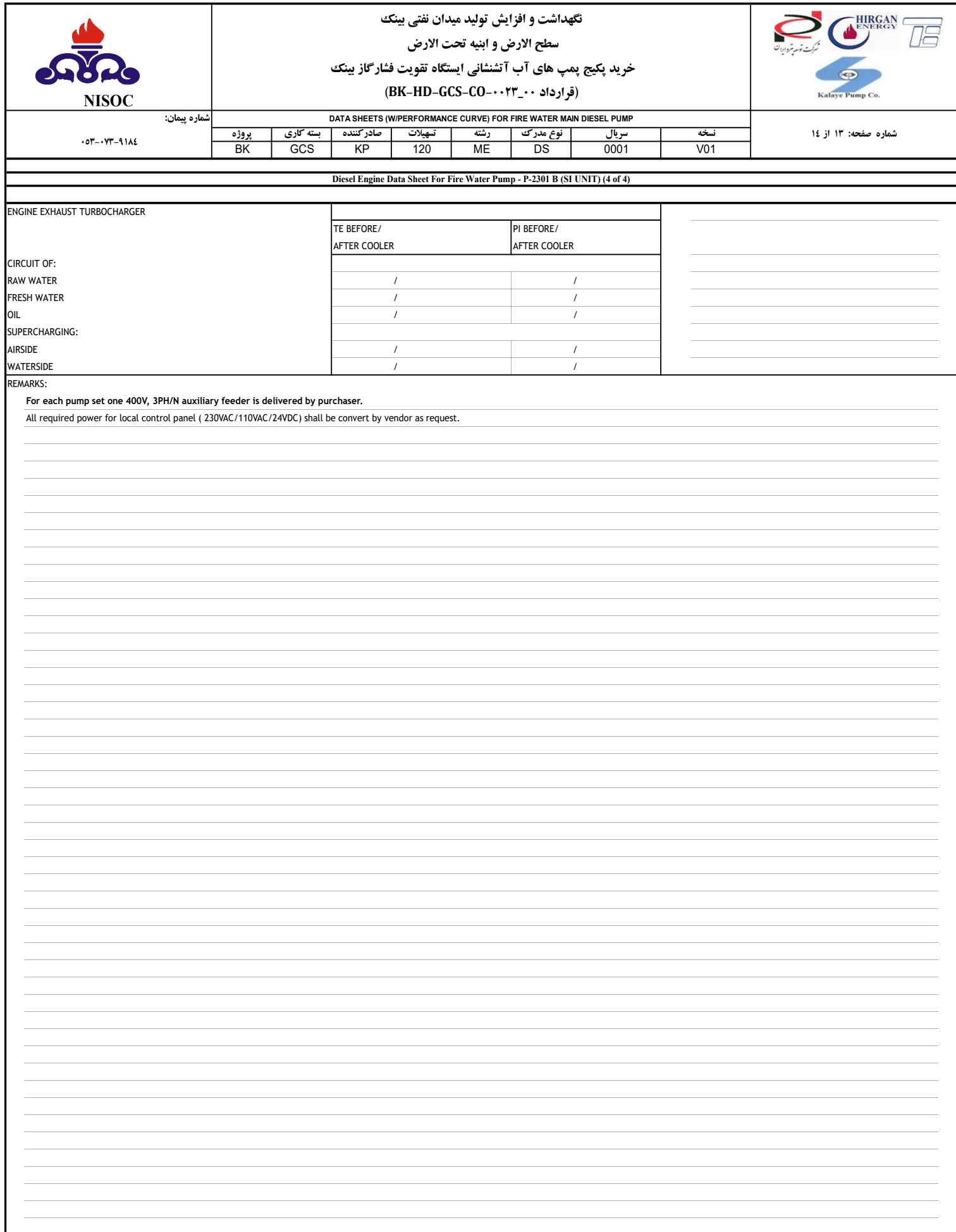
<div> NISOC</div>	<div>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰-۰۳-BK-HD-GCS-CO)</div>	<div> HIRGAN ENERGY گاز پارس</div> <div> Kalaye Pump Co.</div>																																																																
شماره پیمان: ۰۵۳-۰۰۲۳-۹۱۸۴	<div>DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP</div> <table><tr><td>نسخه</td><td>سرال</td><td>نوع مدرک</td><td>رشته</td><td>تجهیزات</td><td>صادر کننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>V01</td><td>0001</td><td>DS</td><td>ME</td><td>120</td><td>KP</td><td>GCS</td><td>BK</td></tr></table>	نسخه	سرال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه	V01	0001	DS	ME	120	KP	GCS	BK	شماره صفحه: ۱۴ از ۱۶																																																
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CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 3 of 6)																																																																		
CONSTRUCTION																																																																		
<div>API PUMP TYPE: BB1 [Based on API 610 definitions]</div> <div>NOZZLE CONNECTIONS: (6.5.5) NOTES 7,11</div> <table><tr><td></td><td>Size</td><td>Facing</td><td>Rating</td><td>Position</td></tr><tr><td>SUCTION</td><td>8"</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>DISCHARGE</td><td>6"</td><td>RF</td><td>150</td><td>SIDE</td></tr></table> <div>PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2)</div> <table><tr><td>No.</td><td>Size</td><td>Type</td><td>Facing</td><td>Rating</td><td>Posn.</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>BAL./LEAK OFF</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>DRAIN</td><td>1</td><td>1/2"</td><td>SWF</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>VENT</td><td>1</td><td>1/2"</td><td>SWF</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>PRESSURE GAGE</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>TEMP GAGE</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>WARM-UP LINE</td><td></td><td></td><td></td><td></td><td></td></tr></table> <div>Drain Valve Supplied By</div> <div>SUPPLIER</div> <div>DRAINS MANIFOLDED</div> <div>YES</div> <div>VENT Valve Supplied By</div> <div>SUPPLIER</div> <div>VENTS MANIFOLDED</div> <div>YES</div> <div>THREAD. CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2)</div> <div>NO</div> <div>SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3)</div> <div>NO</div> <div>CYLINDRICAL THREADS REQUIRED (6.4.3.8)</div> <div>NO</div> <div>GUSSET SUPPORT REQUIRED</div> <div>YES</div> <div>If Needed</div> <div>MACHINED AND STUDDED CONNECTIONS (6.4.3.12)</div> <div>NO</div> <div>VS 6 DRAIN</div> <div>N/A</div> <div>DRAIN TO SKID EDGE</div> <div>YES</div>		Size	Facing	Rating	Position	SUCTION	8"	RF	150	SIDE	DISCHARGE	6"	RF	150	SIDE	No.	Size	Type	Facing	Rating	Posn.							BAL./LEAK OFF						DRAIN	1	1/2"	SWF	RF	150	SIDE	VENT	1	1/2"	SWF	RF	150	SIDE	PRESSURE GAGE						TEMP GAGE						WARM-UP LINE						<div>CASING MOUNTING:</div> <div>CASING TYPE: (6.3.10)</div> <div>OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6)</div> <div>CASE PRESSURE RATING:</div> <div>MAWP : (6.3.5) 15 By vendor barg @ Amb. °C</div> <div>HYDROTEST : 22.5 1.5*MAWP barg @ Amb. °C</div> <div>HYDROTEST OH PUMP AS ASSEMBLY</div> <div>YES</div> <div>SUCTN PRESS. REGIONS DESIGNED FOR MAWP</div> <div>YES</div> <div>ROTATION: (VIEWED FROM COUPLING END)</div> <div>CW</div> <div>YES</div> <div>IMPELLERS INDIVIDUALLY SECURED :</div> <div>BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION :</div> <div>PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS</div> <div>ROTOR:</div> <div>SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3)</div> <div>First Critical Speed Wet (Multi stage pumps only)</div> <div>NO</div> <div>COMPONENT BALANCE TO ISO 1940 G1.0</div> <div>SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3)</div> <div>COUPLING:(7.2.3) (7.2.13.f) NOTE 16</div> <div>MANUFACTURER Colossus</div> <div>MODEL</div> <div>FLEXIBLE SPACER TYPE</div> <div>RATING (POWER/100 RPM)</div> <div>SPACER LENGTH 180 mm</div> <div>SERVICE FACTOR Min 1.5</div> <div>RIGID NO</div> <div>COUPLING WITH HYDRAULIC FIT (7.2.10)</div> <div>COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3)</div> <div>YES</div> <div>COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11)</div> <div>COUPLING IN COMPLIANCE WITH (7.2.4) API 671</div> <div>COUPLING GUARD STANDARD PER (7.2.13.a) ISO 14120</div> <div>Window on Coupling Guard YES</div>
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WARM-UP LINE																																																																		
<div>MATERIAL (6.12.1.1)</div> <div>APPENDIX H CLASS I-2 NOTES 3</div> <div>MIN DESIGN METAL TEMP (6.12.4.1) 5 °C</div> <div>REDUCED-HARDNESS MATERIALS REQD (6.12.1.12.1)</div> <div>Applicable Hardness Standard (6.12.1.12.3)</div> <div>BARREL :</div> <div>CASE : GGG40(A536 60-40-18)</div> <div>DIFFUSERS</div> <div>IMPELLER : C95200</div> <div>IMPELLER WEAR RING : C95200</div> <div>CASE WEAR RING : C95200</div> <div>SHAFT: A276 T420</div> <div>Bowl (if VS-type)</div> <div>Inspection Class Note 2</div>	<div>BASEPLATE</div> <div>API BASEPLATE NUMBER :</div> <div>BASEPLATE CONSTRUCTION (7.3.14) PARTIAL TOP DECKING</div> <div>BASEPLATE DRAINAGE (7.3.1) Entire Baseplate Drain Pan</div> <div>MOUNTING :</div> <div>NON-GROUT CONSTRUCTION : (7.3.13)</div> <div>VERTICAL LEVELING SCREWS :</div> <div>LONGITUDINAL DRIVER POSITIONING SCREWS :</div> <div>SUPPLIED WITH :<ul style="list-style-type: none">GROUT AND VENT HOLES YESDRAIN CONNECTION YES</div> <div>MOUNTING PADS SIZED FOR BASEPLATE LEVELING (7.3.5) YES</div> <div>MOUNTING PADS TO BE MACHINED (7.3.6) YES</div> <div>PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET YES</div> <div>OTHER</div> <div>REMARKS :</div>																																																																	
<div>BEARINGS AND LUBRICATION (6.10.1.1)</div> <div>BEARING (TYPE / NUMBER): (6.11.4)</div> <div>RADIAL ROLLER / 1</div> <div>THRUST BALL / 1</div> <div>REVIEW AND APPROVE THRUST BEARING SIZE : (9.2.5.2.4)</div> <div>LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) GREASE</div> <div>PRESSURE LUBE SYSTEM TO ISO 10438- (9.2.6.5)</div> <div>ISO 10438 DATA SHEETS ATTACHED</div> <div>Pressurized Lube Oil System mtd on pump baseplate</div> <div>Location of Pressurized Lube Oil System mounted on baseplate :</div> <div>INTERCONNECTING PIPING PROVIDED BY Supplier</div> <div>OIL VISC. ISO GRADE VG</div> <div>CONSTANT LEVEL OILER :</div>																																																																		

<div> NISOC</div>	<div>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰ BK-HD-GCS-CO)</div>							<div> شرکت هیرگان انرژی  Kalayee Pump Co.</div>																								
شماره پیمان: ۰۵۳-۰۰۷۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۸																								
	پروژه BK	بسته کاری GCS	صادر کننده KP	تسهیلات 120	رشته ME	نوع مدرک DS	سریال 0001		نسخه V01																							
CENTRIFUGAL PUMP DATA SHEET (SI UNIT) -P-2301 B (Sheet 5 of 6)																																
SURFACE PREPARATION AND PAINT					TEST																											
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 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					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) KPC:NOT APPLICABLE LIQUID PENETRANT YES MAG PARTICLE ULTRASONIC RADIOGRAPHY YES INSPECTION REQUIRED FOR CASTINGS LIQUID PENETRANT YES MAG PARTICLE NO 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																											
<table><tr><td>ITEM No</td><td>PUMP</td><td>DRIVER</td><td>GEAR</td><td>BASE</td><td>TOTAL</td></tr><tr><td>P-2301 B</td><td>750</td><td>1790</td><td>Not applicable</td><td>840</td><td>3420</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>						ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL	P-2301 B	750	1790	Not applicable	840	3420															
ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL																											
P-2301 B	750	1790	Not applicable	840	3420																											
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 (10.2.3.1) 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																																

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰ BK-HD-GCS-CO)							 																									
شماره پیمان: ۰۵۳-۰۰۲۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۹																									
	پروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال		نسخه																								
	BK	GCS	KP	120	ME	DS	0001	V01																									
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)																																	
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																																	
MATERIAL INSPECTION																																	
THESE REFERENCES MUST BE LISTED BY THE PURCHASER																																	
ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)																																	
DEFAULT TO TABLE 14																																	
YES																																	
<table><thead><tr><th>TYPE OF INSPECTION</th><th>METHOD</th><th>FOR FABRICATIONS</th><th>FOR CASTINGS</th></tr></thead><tbody><tr><td>RADIOGRAPHY</td><td></td><td></td><td></td></tr><tr><td>ULTRASONIC INSPECTION</td><td></td><td></td><td></td></tr><tr><td>MAGNETIC PARTICLE INSPECTION</td><td></td><td></td><td></td></tr><tr><td>LIQUID PENETRANT INSPECTION</td><td></td><td></td><td></td></tr><tr><td>VISUAL INSPECTION (all surfaces)</td><td></td><td></td><td></td></tr></tbody></table>										TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS	RADIOGRAPHY				ULTRASONIC INSPECTION				MAGNETIC PARTICLE INSPECTION				LIQUID PENETRANT INSPECTION				VISUAL INSPECTION (all surfaces)			
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REMARKS :																																	

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شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۰ از ۱۴	
	پروژه BK	بسته کاری GCS	صادر کننده KP	تهیهات 120	رشته ME	نوع مدرک DS	سریال 0001		
Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (1 of 4)									
SERVICE: FOR: SITE: NO. REQUIRED:	Fire Water Pumps - Diesel Engine Driven NISOC BINAK Gas Compressor Station 1				MANUFACTURER: MODEL NO: TYPE:				VOLVO TAD 1341
		(Note 1)				REMARKS			
OPERATING CONDITIONS									
DIESEL ENGINE MANUFACTURER									
ISO POWER (ISO 3046)		kW		308					
ISO SPEED		rpm		1490					
SITE CONTINUOUS RATED POWER		kW		275					
SITE CONTINUOUS RATED SPEED		rpm		1490					
OVERLOAD SITE POWER		kW							
OVERLOAD SPEED		rpm							
OVERLOAD DURATION		h							
DIRECTION OF ROTATION (FROM CPLG)		CW/CCW		CCW					
SPEED RANGE		±% rpm							
IDLE SPEED		rpm		900					
LOADING TIME		s		10					
PERFORMANCE									
% OF MAX CONT SITE POWER									
FUEL SPECIFIC CONSUMPTION		g/kWh							
TOLERANCE		%							
SPEED		rpm		(NOTE 20)					
LOAD ACCEPTANCE RATING		% 1 step							
ENGINE DATA									
CYCLE:- 2 STROKE/4 STROKE						4 STROKE REQUIRED KPC:Confirmed			
NUMBER OF CYLINDERS									
IN-LINE/V FORM									
BORE/STROKE		mm							
CAPACITY		liters							
BMEP (RATED)									
PISTON SPEED		m/s							
COOLING SYSTEM: AIR/WATER						CLOSED SYSTEM KPC:Confirmed (Air fan & Radiator)			
TURBOCHARGER:-									
SINGLE OR SERIES									
INTERCOOLER		CA or CW							
EMISSIONS									
No _x EMISSION		g/kWh				IPS-E-SF-860 KPC:Confirmed			
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		two battery banks, each bank consist of 20x200Ah batteries. totally 40cells each one 200Ah. (2x(20x200Ah)) please confirm. KPC:Noted and confirmed				2 set including 20 cells with 200 ampere hour capacity at least (Dual charger equal to 100% of power)			
TYPE						V01 Nickel - Cadmium			
TOTAL CAPACITY		Ah							
STARTING CIRCUIT									
STARTING MOTOR									







KALAYE PUMP CO.

Performance curve



Item No.	P-2301 B	Pump Model	KSPF 150-570	Flow, Rated (m^3/h)	454.2
Liquid	Water	Speed (rpm)	1490	Head (m)	105
Temp. ($^{\circ}C$)	-3.5 / 53	Rated Imp.Dia. (mm)	530	Efficiency (%)	72
Density(kg/m^3)	997	Suction Size (Inch)	8	NPSHR (m)	3.5
Viscosity (cp)	1	Disch. Size (Inch)	6	Rated Power (kw)	180.5
NPSHA (m)	8.8	NSS ($m^3/h, m, rpm$)	8498	Diesel Power (kw)	308

