Base Load Power Hub (BLPH)

PUMP DATA SHEETS INCLUDING WEIGHT DATA SHEET
For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)

Document Number: 1724000936-MAC-DS-00012

Document Class: 2

02	01/10/2024	Accepted for Construction (AFC)	APD	GLL	AHN
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00	24/06/2024	Issue for Review (IFR)	APD	GLL	AHN
Rev.	Date	Description	Prepared	Reviewed	Approved

PCM | keep it moving

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Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Accepted for Construction (AFC)
02	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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NOTE: ○ INDICATES INFORMATION TO BE COMPLETED BY PURCHASER ☐ BY MANUFACTURER

GENERAL

NO. MOTORS DRIVEN	2 (TWO)	OTHER DRIVER TYPE			
PUMP ITEM NO'S	P-5001A/B	PUMP ITEM NO'S			
MOTOR ITEM NO'S	PM-5001A/B	DRIVER ITEM NO'S		GEAR ITEM NO'S	
MOTOR PROVIDED BY	ABB	DRIVER PROVIDED BY	N/A	GEAR PROVIDED BY	NORD
MOTOR MOUNTED BY	PUMP VENDOR	DRIVER MOUNTED BY	N/A	GEAR MOUNTED BY	PUMP VENDOR
MOTOR DATA SHEET NO.	1724000936-MAC-DS-00014	DRIVER DATA SHEET NO.		GEAR DATA SHEET NO.	

● OPERATING CONDITIONS

- ● CAPACITY @ PT (m³/h):
- @ MAXIMUM VISCOSITY @ MIN. VISCOSITY **2,5**
- ● DISCHARGE PRESSURE (kPa)(BARG):
- MAXIMUM **5.3 (note 3)** MINIMUM
- ● SUCTION PRESSURE (kPa)(BARG):
- MAXIMUM MINIMUM **Flooded (note 1)**
- ● DIFFERENTIAL PRESSURE (kPa)(BARG)
- MAXIMUM MINIMUM **(note 3)**
- ● NPSH AVAILABLE (m) **>7 @ level +0,00 (note 1)**
- ○ HYDRAULIC kW
- PSV Set Value : 7.6 barg

● LIQUID

- ● TYPE OR NAME OF LIQUID **SEA WATER**
- ● PUMPING TEMPERATURE (°C):
- NORMAL **20** MAX MIN **1,3**
- ● SPECIFIC GRAVITY **1,03** MAXIMUM **1,02** MINIMUM
- ○ SPECIFIC HEAT Cp (kJ/kg °C)
- ● VISCOSITY (Cp) **0,9** MINIMUM MAXIMUM
- ● CORROSIVE/EROSIVE AGENTS **SAND/SALT PARTICLES**
- ● CHLORIDE CONCENTRATION (PPM) max 35,000 ppm
- ○ H_2S CONCENTRATION (PPM)
- LIQUID ○ TOXIC ○ FLAMMABLE ○ OTHER
- Fluid considered with no H2S / C02 / BTEX and TSS < 5%

■ PERFORMANCE

- ■ RATED CAPACITY (m³/h) **2,5**
- ■ NPSH REQUIRED (m) **0.56 mH2O**
- ■ RATED SPEED (RPM) **118**
- ■ DISPLACEMENT (m³/h) **3,3**
- ■ VOLUMETRIC EFFICIENCY (%) **81,6**
- ■ MECHANICAL EFFICIENCY (%) **56,7**
- ■ kW @ MAXIMUM VISCOSITY **1,45**
- ■ kW @ RELIEF VALVE SETTING **1,55**
- ■ MAXIMUM ALLOWABLE SPEED (RPM) **450**
- ■ MINIMUM ALLOWABLE SPEED (RPM) **100**

■ CONSTRUCTION

	SIZE	ANSI RATING	FACING	POSITION
CONNECTIONS				
SUCTION				**BOTTOM**
DISCHARGE	**1" 1/2**	**150#**	**RF**	**SIDE**
MOUNTING	**16"**	**150#**	**RF**	
DRAINS				
VENTS				
JACKET				

PUMP TYPE:

☐ INTRN'L GEAR ☐ TWIN-SCREW ☐ VANE
☐ EXTRN'L GEAR ☐ 3-SCREW ■ PROGRESSING CAVITY

GEAR TYPE

☐ SPUR ■ HELICAL
☐ OTHER

● SITE AND UTILITY DATA

LOCATION ○ INDOOR ● OUTDOOR
○ HEATED ● UNHEATED ○ UNDER ROOF
○ ELECTRICAL AREA CLASS SAFE GROUP DIV
○ WINTERIZATION REQD ○ TROPICALIZATION REQD

SITE DATA

○ RANGE OF AMBIENT TEMPS:MIN/MAX -8 / 25 °C

UNUSUAL CONDITIONS

○ DUST ○ FUMES ● SALT ATMOSPHERE
○ OTHER
○ UTILITY CONDITIONS

ELECTRICITY	DRIVERS	HEATING	CONTROL	SHUTDOWN
VOLTAGE	**400**			
HERTZ	**5**			
PHASE	**50**			

COOLING WATER	INLET	RETURN	DESIGN	MAX Δ
TEMP °C		MAX		
PRESS. (BARG)		MIN		
SOURCE				

INSTRUMENT AIR MAX MIN
PRESSURE (kPa)(BARG)

APPLICABLE SPECIFICATIONS:

API 676 POSITIVE DISPLACEMENT PUMPS - ROTARY
○ GOVERNING SPECIFICATION (IF DIFFERENT) **(5)**

REMARKS:

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	PUMP DATA SHEETS	Sh. 4 of 7 Date : 01/10/2024 Rev. 02

CONSTRUCTION (CONTINUED)

CASING

- MAXIMUM ALLOWABLE PRESSURE: 20 (BARG) 20 °C
- HYDROSTATIC TEST PRESSURE: 30 (BARG)
- STEAM JACKET PRESSURE: (BARG) °C
- ROTOR MOUNT ☐ BTWN. BEARINGS ■ OVERHUNG
- TIMING GEARS ☐ YES ☐ NO
- BEARING TYPE: ■ RADIAL TIMKEN (1) ☐ THRUST
- LUBRICATION TYPE: ○ CONSTANT LEVEL OILERS
  - ☐ PUMPED FLUID ☐ RING OIL ☐ OIL MIST
  - ☐ EXTERNAL ☐ OIL FLOOD ■ GREASE
- ■ LUBRICANT TYPE Fuchs Renolin CLP 220
- ● MECHANICAL SEALS
  - ■ MANUFACTURER AND MODEL Flowserve / ISC2-PX
  - ■ MANUFACTURER CODE 1CW-FX
- ● API 610 SEAL FLUSH PLAN API PLAN 51
- ■ API 610 SEAL CODE 21A-FFQ-060-13/51
- ○ PACKING: ○ LANTERN RING
  - ☐ MFR. AND TYPE ☐ NO. OF RINGS

DRIVE MECHANISM

- ○ DIRECT-COUPLED ○ V-BELT ■ GEAR
- ■ COUPLING MANUFACTURER John Crane

DRIVERS

- ● MOTOR:
- ■ MANUFACTURER ABB
- ■ TYPE 4 poles, safe area induction motor
- ■ FRAME NO. IEC 132
- ● CONSTANT SPEED
- ○ VARIABLE SPEED
- ■ kW 5,5 RPM 1463
- ● VOLTS 400 PHASE 3
- ● HERTZ 50 SERVICE FACTOR S1
- ● ENCLOSURE TEFC
- ○
- ○ STEAM TURBINE
- ○ OTHER (SEE SEPARATE DATA SHEETS)

OTHER PURCHASER REQUIREMENTS

NAMEPLATE UNITS ○ U.S. CUSTOMARY ● SI

- ● RELIEF VALVES BY PUMP MFRG ● INTERNAL ○ EXTRNL.

PIPING FOR SEAL FLUSH FURNISHED BY:

- ● PUMP VENDOR (2) ○ OTHERS

PIPING FOR COOLING/HEATING FURNISHED BY:

- ○ PUMP VENDOR ○ OTHERS
- ● PROVIDE TECHNICAL DATA MANUAL (3)

MATERIALS

- ■ CASING Super Duplex SS (25%Cr)
- ■ STATOR NBR
- ■ END PLATES N/A
- ■ ROTOR (S) Super Duplex SS (25%Cr)
- ■ VANES N/A
- ■ SHAFT Super Duplex SS (25%Cr)
- ■ SLEEVE (S) Super Duplex SS (25%Cr)
- ■ GLAND (S) Super Duplex SS (25%Cr)
- ■ BEARING HOUSING Cast Iron
- ■ MOTOR Cast Iron
- ○ SPECIAL MATERIAL TESTS
- ○ LOW AMBIENT TEMP. MATERIALS TESTS

QA INSPECTION AND TEST

- ● COMPLIANCE WITH INSPECTORS CHECK LIST
- ● CERTIFICATION OF MATERIALS (Material certificate 3.1)
- ● FINAL ASSEMBLY CLEARANCES
- ● SURFACE AND SUBSURFACE EXAMINATIONS
  - ○ RADIOGRAPHY
  - ○ ULTRASONIC
  - ○ MAGNETIC PARTICLE
  - ● LIQUID PENETRANT 100 % of welds
- ● CLEANLINESS PRIOR TO FINAL ASSEMBLY
- ○ HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES
- ○ FURNISH PROCEDURES FOR OPTIONAL TESTS

TESTS	REQ'D	WIT	OBS
HYDROSTATIC	○	●	○
MEHANICAL RUN	○	●	○
PERFORMANCE	○	●	○
NPSH	○	○	○

PREPARATION FOR SHIPMENT

- ● DOMESTIC ○ EXPORT ○ EXPORT BOXING REQ'D
- ○ OUTDOOR STORAGE MORE THAN 6 MONTHS

WEIGHTS (kg)

■ PUMP 1836 ☐ BASE 0 ■ GEAR 26 ■ MOTOR 81

BASEPLATE

- ● BY PUMP MANUFACTURER ○ SUITABLE FOR EPOXY GROUT
- ○ EXTENDED FOR
- ● SUBSOLE PLATES BY PUMP MANUFACTURER
- ○ DRAIN-RIM ○ DRAIN-PAN

REMARKS

(1) Shaft sleeves hardnedned in correspondence of plain bearings

(2) Plan 51 will be mounted on the pump assembly and connected to the seal with SS316L tubing and fitting.

Plan 51 is to be filled with clean fresh water. I t needs to be maintained at positive temperature.

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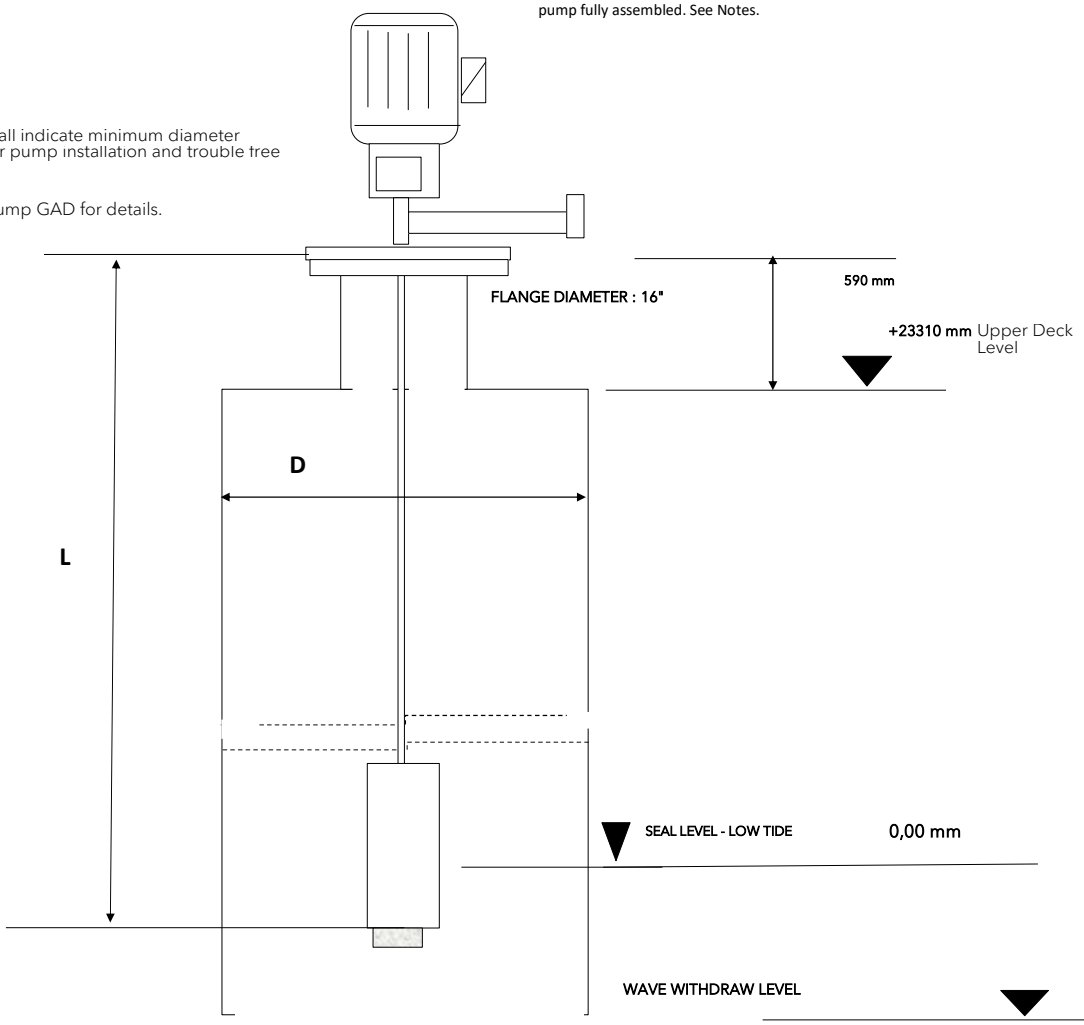
L 29.81 m

D 333.34 mm

NOTE:
Vendor shall indicate minimum diameter suitable for pump installation and trouble free operation

Refer to pump GAD for details.

Vendor to declare the mounting/dismountig clearance considering the pump fully assembled. See Notes.



OPEN CAISSON

Expected wave withdraw is 5.4 meters below low tide level (-5,40 m)
Pump lenght shall be defined to consider the above

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NOTES

1) For NPSHA vendor to consider 1bara at minimum seawater level (+ 0,00 mm)

2) Pump lenght to be calculated by vendor according to a reliable margin (VTA) between NPSHA vs NPSHR and minimum submergence
Vendor to advise the suction nozzle depth, according to the above sentence

3) Discharge pressure / head is referred to pump battery limit (i.e. dicharge nozzle)

4) Suction strainer to be provided by vendor.
Mesh size is 7mm diameter as per PCM standard design for the selected pumps.
Mesh size shall be minimized without jeopardizing suction condition.

5) Full compliance to API Std 676 is not strictly mandatory. Vendor to submit a list of deviation supported by reference list
Please refer to attached list of technical clarifications & deviations, including API 676.

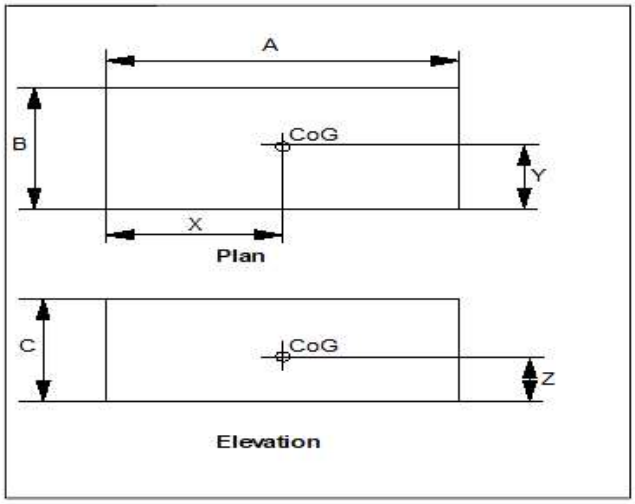
6) Vendor to declare mounting/dismantling clearance considerinf full assmbled pump
For full assembled pump mounting/ dismantling, the required minimum vertical clearance will be the total length of the equipment (including motor & all casing extensions : approx 35 m estimated), plus the required length for slings, depending on the lifting equipment to be used.
This clearance will be required above the supporting flange elevation.

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WEIGHT DATA (kg)

		Areas for input by Supplier
Dry Weight	(I)	1943 kg
Content	(II)	2150 kg
Operating Weight	(I+II)	4093 kg
Auxiliaries' weight, included in I (specify under Notes)		kg
Test weight, i.e. filled with water		kg
Transport weight		1943 kg

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions	
A =	971 mm
B =	597 mm
C =	32170 mm

CoG location (mm)	
X =	7 mm
Y =	-1 mm
Z =	-12398 mm

NOTES

Datum point considered to locate the C.O.G of the pump is the center of the mounting flange.

WEIGHT AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated ☐ Calculated

☐ Catalogue data ☐ Weighed

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