Base Load Power Hub (BLPH)

PRESERVATION PROCEDURE
For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)

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Document Class: 3

ROSETTI MARINO

1	APPROVED - WORK MAY PROCEED
2N	REVISE AND RE-SUBMIT - DO NOT PROCEED
2Y	REVISE AND RE-SUBMIT - WORK MAY PROCEED
3	REJECTED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

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Revision / Change Log

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Table of contents

1 DOCUMENT SCOPE 4

1.1 REFERENCES 4

1.2 DEFINITIONS AND ABBREVIATIONS 4

2 LIMIT OF GUARANTEE 5

3 INITIAL PRESERVATION 5

4 LONG TERM STORAGE – EQUIPEMENT PACKED 5

5 PACKING DAMAGED 6

6 EQUIPMENT UNPACKED (BEFORE INSTALLATION) 6

7 EQUIPMENT INSTALLED / COMMISSIONING 7

List of tables

Table 1 - Reference Documents 4

Table 2 - Definitions and Abbreviations 4

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1 DOCUMENT SCOPE

This document aims at describing how pumps will be initially preserved & preservation requirements when pumps are installed

1.1 REFERENCES

Doc. No.	Description
1724000936-QC-PRO-00032	PACKING PROCEDURE
1724000936-MAC-DS-00012	PUMP DATA SHEETS INCLUDING WEIGHT DATA SHEET
1724000936-MAC-DA-00004	GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS
1724000936-MAC-DD-00006	PUMP CROSS SECTIONAL DRAWING AND BILL OF MATERIAL
1724000936-MAC-MAN-00031	INSTALLATION, OPERATING AND MAINTENANCE MANUAL

Table 1 - Reference Documents

1.2 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project
VENDOR:	PCM
OSD:	Overage- Shortage – Damage

Table 2 - Definitions and Abbreviations

2 LIMIT OF GUARANTEE

On reception of the pump, immediately inspect it for any obvious signs of damage. If it is visibly damaged, clearly note on the shipper's papers that the merchandise has been received damaged, briefly describing the type of damage observed. Purchaser Expediting Team will forward by email to PCM team all OSD including details of the discrepancy detected within 48 hours.

- Over (O) = Quantity higher than expected
- Short (S) = Quantity lower than expected
- Damaged (D) = Material is damaged

Storage conditions are explained in this document. To avoid any damage or accidents (in particular, when the pumped fluids are hazardous), it is essential that this equipment is not used for applications other than those initially designed for.

To maintain the original qualities of the pump, original PCM spare parts must be used.

3 INITIAL PRESERVATION

All parts are cleaned, dried, and protected, internally and externally, before the packing. Caps are used to ensure the protection of the pumps discharge nozzles. The bolting & loose parts are distributed into dedicated boxes if any. The long-term storage duration (12 months) is valid assuming that the instructions of the following sections are respected. During initial packing, full pictures report will be made and available for information.

4 LONG TERM STORAGE – EQUIPEMENT PACKED

All pumps will be seaworthy packed, for a guarantee period of 12 months.

The seaworthy packing (based on packing type S.E.I 4c) consists of crates with closed joints and physical-chemical protection. The corrosion protection is guaranteed by a vapor and corrosion inhibitor wrapping and by addition of desiccant bags (number depending on the crate size). Please refer to Packing Procedure.

The equipment must be kept in its original packing away from bad weather. Temperature must be kept between +3°C min and + 50°C max, +5% to 100% Humidity in outdoor conditions. Prevent crates from external vibration especially for bearing units & motors.

Every 2 months:

- Prior to open crates, they must be stored in storage building covered and ventilated to get the normal atmospheric conditions.
- Open shrink-wraps. When wraps are unsealed, make sure to avoid intrusion of water, dust, and sand on the equipment and especially on bearing units and couplings. Do not remove protecting flanges provided with the pumps on discharge nozzles.
- Pump rotor/motor shaft to be rotated (4/5 laps) by hand using the motor fan or the coupling as appropriate.
- Remove air from shrink-wraps & sealed them as per initial packing instructions.

Every 6 months:

- In addition to above operations, all desiccant bags for each individual wrap must be replaced.
- Remove air from shrink-wraps & sealed them as per initial packing instructions.

Pumps are delivered completely assembled and glycerin is initially applied between rotor and stator.

5 PACKING DAMAGED

If initial packing is damaged, crates must be stored in storage building covered and ventilated to get the normal atmospheric conditions & Section 6 instructions must be followed until new packing is done. Packing procedure must be followed to repack.

6 EQUIPMENT UNPACKED (BEFORE INSTALLATION)

When it is necessary to store unpacked pump unit for a short time before installation equipments/crates must be stored in storage building covered and ventilated to get the normal atmospheric conditions.

When the equipment is unpacked, the following instructions shall be followed:

Operation	Frequency of check				
	During unpacking	Monthly	2 Monthly	Yearly	Prior installation
Verify internal condition and lubrication of Rotor/Stator and if required: Apply glycerin inside opened inlet cavity of Stator by removing pump's strainer. Repeat the operation while doing step 3 to apply glycerin on all stator/rotor length.			X		
Check Bearing units and grease if necessary.			X		
Pump rotor to be rotated (4/5 laps) by hand using the motor fan or the coupling as appropriate. (Clockwise – same as normal operation)			X		

Other recommendations:

- Do not subject to shocks.
- Seal against dust with a plastic film.
- If some parts are damaged, they must be replaced before the running the pumps especially elastomers parts such as sheaths or stator.

7 EQUIPMENT INSTALLED / COMMISSIONING

When pumps are in place and until commissioning phases, below instructions must be followed:

Operation	Frequency of check				
	Weekly	Monthly	2 Monthly	Yearly	Prior to start
Verify internal condition and lubrication of Rotor/Stator and if required: Apply glycerin inside opened inlet cavity of Stator by removing pump's strainer. Repeat the operation while doing step 3 to apply glycerin on all stator/rotor length.			X		
Check Bearing units and grease if necessary.			X		
Pump rotor to be rotated (4/5 laps) by hand using the motor fan or the coupling as appropriate. (Clockwise – same as normal operation).			X		
Follow the requirements of the maintenance manuals.					X
In the case where the sealing system is pressurized, check if there is any leakage. It is recommended to not keep sealing system pressurized if pump is not used during more than 1 month (Barrier Fluid & N2).	X				

Other recommendations:

- The ageing of rubber is dependent on storage conditions: heat, temperature, humidity, etc…
- If stored more than 3 years, rubber parts such as stator & sheaths must be inspected to check if not showing any swelling, or cracking and must not stick at touch. In one or the other case, replacement of these rubber made components must be done.
- Commissioning spares includes all rubber parts (O-ring gaskets & sheaths) expect stator.

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