Base Load Power Hub (BLPH)

SHIPPING, PACKING, HANDLING & STORAGE and PRESERVATION PROCEDURE
H2 STORAGE VESSEL

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ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

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Sign	Date
M. Bln	02/09/2024

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HOLD LIST

No.	Description
1	
2	
3	
4	

CLIENT:	**ROSETTI MARINO**
PURCHASE ORDER No.:	**1723001756 123A90A**
END USER:	**CROSSWIND**
ENGINEERING	**ROSETTI MARINO**
PROJECT:	**BLPH PLATFORM**
SITE:	**HOLLANDSE KUST NOORD SITE V**
ITEM:	**V-25001 A-F**
EQUIPMENT TYPE:	**HORIZONTAL EQUIPMENT**
SERVICE:	**H2 STORAGE VESSEL**
MANUFACTURER	**BREMBANA & ROLLE S.p.A.**
JOB NOMBER:	**23096**
SERIAL NUMBER	**23096-01-SNA-SNF**

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CONTENTS

1.1. SCOPE 5
1.2. REFERENCE DOCUMENTS 5
2.1. GENERAL INSTRUCTIONS 6
2.2. PROTECTION FOR TRANSPORT, STORAGE 6
2.2.1. PREPARATION OF ITEMS FOR SHIPPING 6
2.2.2. SPARE PARTS 7
2.2.3. INSPECTION BEFORE SHIPPING 7
2.2.4. CERTIFICATION BEFORE SHIPPING 7
2.3. HANDLING 7
2.4. UNPACKING AFTER SHIPPING 7
2.5. PRESERVATION AND STORAGE 8

1. FOREWORD

1.1. SCOPE

This manual details the methods employed for the preparation of shipping of the Equipments under the scope of works of Brembana&Rolle.

1.2. REFERENCE DOCUMENTS

All activities and operations in the scope of this manual shall be done strictly in accordance, with the following documents:

- General Arrangement drawings:
  B&R ref.: 23096-01-EGA1 (Client Doc. no. 1723001756-MAC-DA-00004)
- Shipping drawings:
  B&R ref. 23096-01-ESH1 (Client Doc. no. 1723001756-TI-DD-00021)
- Nitrogen Purging drawings:
  B&R ref. 23096-01-EPRS (Client Doc. no. 1723001756-TI-DD-00021)
- Mechanical calculations and nozzle loading calculations:
  B&R ref. 23096-01-EMC1 (Client Doc. no. 1723001756-MAC-CAL-00003)
- TECHNICAL SPECIFICATION 123A90-DDL-MAC-SP-50026_01

Any conflict discovered among the above mentioned documents shall be brought to the attention of B&R and solved before proceeding with the works. Other specific documents may be issued by B&R whenever required by special applications of the pressure equipment; they will be pointed out to the attention of the involved personnel by means of notes on the General Arrangement drawing.

2. SECTION 1

2.1. GENERAL INSTRUCTIONS

The employed personnel shall be of proved experience and skill about activities of pressure equipment operation, handling and movement. Works shall be executed according to the documents mentioned in the foreword.

The tags of the equipment covered by this procedure are the following:

ITEM	S/N	DWG #	TYPE
V-25001 A-F ③	23096-01-SNA-SNF ②	23096-01-EGA1 1723001756-MAC-DA-00004	H2 Storage Vessel

2.2. PROTECTION FOR TRANSPORT, STORAGE

2.2.1. PREPARATION OF ITEMS FOR SHIPPING

The items shall be internally and externally cleaned, in manner to remove weld spatters, scales, rust, cuts, filings and any other foreign material. For SS, clad, alloy lined steels, stainless steel brushes shall be used on alloy. Solvents shall be free of chlorides.

After hydrostatic test the water shall be completely drained from the item and then the pressure vessel shall be wiped and blown dry. For stainless steel units, air temperature is limited to 50°C.
The item shall be externally coated, following surface preparation and coating cycles in full adherence to the applicable painting data-sheets and specification.

The machined surfaces that do not require painting (such as gasket contact surface of flanges not closed with process blind flanges) shall be cleaned and coated with a rust preventive such as grease or peeling product (i.e. Tectyl 846 or similar product approved), before closing. All openings shall be made watertight against external atmosphere.

All flanged connections which are not furnished with permanent blinds shall be covered with rubber gaskets 3 mm thick and 6 mm minimum thick, full diameter, steel plate covers. The covers shall be installed with at least 4 bolts (except for the items with nitrogen blanket which require all the openings are closed with full bolting covers and marked with appropriate tag). Flanges drilled for bolting larger than 3/4" diameter may be secured with 3/4" diameter bolts and suitable cut washers. Flanged openings shall be covered with taped heavy plastic sheet. Tape containing chlorides shall not be used on stainless steel.

Bolts thread of pressure retaining bolts, if not otherwise protected, shall be coated with molybdenum disulphide based anti-seizing lubricant.

The items included in the supply shall be conditioned for shipping in accordance with the table below.

ITEM	NITROGEN internal overpressure ≥ 0.5 bar g	SILICA GEL BAGS
V-25001 A-F ③	☒ ②	☒

Threaded vent holes shall be protected by a suitable plugging, at least by silicone application or heavy grease.
Pieces or parts used for protection or reinforcement purposes must not be welded to the equipment.
Surface areas of the item which may come in contact with the slings shall be covered with rubber strips or similar to prevent any type of damages during lifting operation.

2.2.2. SPARE PARTS

Spare parts like gaskets, stud bolt, special tools shall be separately boxed for each mean item. The spares shall be labelled with the equipment item number and cross reference to the relevant drawing.
The box for spare shall be wrapped in waxed paper, the internal protection of box shall be water-proof lined paper and suitable for handling by forks.

2.2.3. INSPECTION BEFORE SHIPPING

All items shall be inspected before shipping, to verify draining, drying, cleaning, blasting and coating quality.

All spare parts boxes shall be inspected for quantity, quality and suitability of package.

Only after satisfactory result of all packing and marking requirements set forth in this procedure, the items shall be released for shipping.

2.2.4. CERTIFICATION BEFORE SHIPPING

At least, the sandblasting and coating inspection certificates shall be inserted in the Data Book.
② Xerox-copy of the nameplate(s) verified and stamped by the ASME and PED inspectors (as applicable) shall be also inserted in the Data Book.

2.3. HANDLING

Horizontal Equipment shall be handled by using their own lifting devices installed. Unless otherwise noted they must be kept in the operating position during handling activities.
A spreader-beam shall be used to maintain vertical the direction of the slings connected.
Cranes of adequate capacity shall be selected on the basis of the maximum loads that can be applied on the lifting devices as highlighted on the Shipping Drawing of the equipment

2.4. UNPACKING AFTER SHIPPING

The equipment has been prepared for shipping by B&R at shop.
Once the equipment is delivered at site it must be submitted to a scheduled visual inspection to check the integrity of all its parts, the surface coating and to insure that nitrogen pressure (if any) does not decrease below the minimum requirement.
Specifically, the pressure target value of 0.3 barg shall be checked and restored anytime the internal pressure is found lower; a touch-up of surface coating only is requested in case of local defect are observed.

The timing of this visual check must be as much frequent as possible at the beginning of the shipping and storage period and can be progressively reduced based on the positive result of the inspection; namely from 7 days up to once a month.

With continuing positive inspection results, sudden failure will not be expected. This justifies for enlarged timing between two subsequent visual checks. Nevertheless, care shall be paid to the accessibility at the equipment by unauthorized people, as this may be cause for voluntary or not damaging actions. (i.e. recovery of blind flanges, studs and nuts, etc. is not uncommon in an extended site area where different Companies are operating).

2.5. PRESERVATION AND STORAGE

It is recommended that the storage of the equipment at site will take place in a covered area, since weather conditions are expected to be the most probable cause of degradation of the protection foreseen on outer surfaces. If it is not feasible Client shall take all the necessary measure to preserve the equipment integrity until the equipment will be operated.

The equipment are protected for the transport and storage prior to erection as necessary against physical damage and/or corrosion which may occur due to the method and conditions of transport and the time which may elapse before erection, up to maximum of three months. For longer storage periods, protection shall be restored by the User at site, with particular attention to the protection of machined surfaces and the compatibility (e.g. against corrosion) of any material used for physical protection.

In case the items are covered with tarpaulin, insure that there is no direct contact between the equipment surface and the covering sheets and, better, a sufficient light is granted in order to let air circulate freely around the equipment.
This, especially in the high humidity areas (sea, tropical, etc.), where the change of air saturated conditions during the 24 day hours easily drive to the formation of water condense on surfaces where no air refreshing is granted, will prevent the condense to form and persist between the equipment and the tarpaulin, promoting a quicker paint degradation.