



BioPak Drying System User Instruction Manual

Biomarine Incorporated

Biomarine-Ntron, Inc.

456 Creamery Way

Exton, Pennsylvania 19341 U.S.A.

Phone: (610) 524-8800

Fax: (610) 524-8807

Web: www.biopak240R.com

Table of Contents

Subject	Page
Cautions and Warnings	2
Drying System Set Up	3
Maintenance	4
Specifications	4
Warranty	5
Illustrated Parts List	6

Cautions and Warnings

- This product is intended for use with 110 VAC/60 Hz main power as specified on the blower unit. Attempts to utilize this product with any other power source will cause damage to the blower motor.
- Plug dryer into a properly grounded receptacle. Always make sure the amperage of the electrical outlet is sufficient for the amperage rating of the dryer. It is strongly recommended to utilize GFI protected power outlets.
- Do not use extension cords with this product.
- This product is not intended for use in any area that may contain explosive or hazardous atmospheres.
- This product is not intended for use submerged in liquid. Do not expose to rain or water. Do not use product where it can fall into water. If dryer falls into water do not reach into water.
- Do not direct the resulting air flow towards the eyes, ears or mouth.
- Do not operate without dryer filters in place. Keep filters clean as dirty or clogged filters will limit air intake and may damage dryer motor or cause overheating.
- Use of this product in applications other than its intended use will void the system warranty.
- Follow instructions provided with the blower unit.

Drying System Use

This product is capable of simultaneously drying up to six (6) BioPak 240R respirators. Drying time will depend upon a number of factors such as ambient temperature, ambient relative humidity and the degree of BioPak 240R saturation.

The drying system utilizes a separately supplied blower. The blower supplied is only suitable for connection to power sources of 110 VAC/60 Hz. There are no heaters within the drying system so there are no concerns about over heating the BioPak. Users in locations that supply power other than specified can purchase their own blower unit to connect the manifold of the dryer system. Specifications for the required blower are listed below to aid in the selection of a suitable unit.

- **Air Volume:** 41 liters/second (86 ft³/minute) Maximum
- **Heating Capacity:** None
- **Air Flow:** Blower shall be constructed so that air flow is not through or past motor electrical brushes. establish that blower does not blow degraded brush material, or any other motor material, out exhaust that could become lodged within the Biopak.

To ready a BioPak for drying follow the below listed steps:

1. Conduct washing and disinfection of the BioPak as directed by the Benchman manual.
2. Reassemble the BioPak respirator excluding the moisture sponges and the carbon dioxide scrubbers. Moisture sponges should be dried external to the Biopak to insure that they are completely dry before installation into the BioPak for storage. This will prevent the formation of mold internal to the BioPak.
3. Install the storage plug onto the facepiece adapter of the BioPak and remove the inhalation breathing hose from the BioPak center section lid. Disconnect the constant add and demand add feed lines to the center section to prevent blowing water up the lines.
4. Position the drying system blower on a level surface away from standing water or liquid, away from explosive or hazardous atmospheres and away from contamination sources such as fouled air, air laden with dust or particles or air laden with chemicals or solvents.
5. Connect the dryer system hose and manifold together. Be sure to connect the hose to the blower and not the suction side of the blower unit.
6. Remove the number of caps from the drying system manifold ports to equal the number of BioPaks to be dried.
7. Connect the loose end of the BioPak inhalation hose to one of the ports of the drying system manifold.
8. Plug the power cord of the drying system into a suitable power outlet as specified on the blower unit.
9. Turn the blower on. Note that actual drying time may vary depending upon factors such as ambient temperature and relative humidity and the level of BioPak saturation.
10. When drying is complete, turn the blower off and unplug the blower.
11. Disconnect the BioPak inhalation hose from the dryer manifold and reconnect to the BioPak center section lid.
12. Complete the BioPak turn around maintenance procedures as stated in the Benchman Manual.

Maintenance

There are no useable serviceable parts in the drying system other than the filters contained within the blower. Should air flow become restricted through the blower the filter elements are most likely clogged and need to be cleaned. Reference the manual provided with the blower unit for maintenance procedures.

Specifications

Power	110/120 Vac, 60 Hz
Air Volume:	41 liters/second (86 ft ³ /minute) MAX.
Heat:	None
Number of BioPaks Simultaneously Dried	1 to 6
Accessories:	As proved by blower unit

Warranty

Biomarine warrants, subject to the terms below, that the goods will be free from defects in design, materials, and workmanship for a period of one (1) year from the date that the goods are purchased by buyer.

THE SOLE LIABILITY OF BIOMARINE FOR ALL PURPOSES SHALL BE TO REPLACE, AT THE SOLE OPTION OF BIOMARINE, DEFECTIVE PARTS APPEARING WITHIN THE ONE-YEAR PERIOD AS APPLICABLE. BIOMARINE SHALL PROVIDE PARTS AT ITS OWN EXPENSE BUT ALL LABOR SHALL BE AT THE EXPENSE OF THE BUYER. BIOMARINE SHALL HAVE NO OBLIGATION FOR REPLACEMENT UNLESS:

1. BIOMARINE HAS RECEIVED WRITTEN NOTICE OF THE ALLEGED DEFECT WITHIN THIRTY (30) DAYS FOLLOWING THE DISCOVERY OF THE DEFECT OR TWELVE (12) MONTHS FROM THE DATE OF PURCHASE, WHICHEVER OCCURS SOONER; AND
2. THE BUYER SUBMITS PROOF OF DATE OF PURCHASE WITH INVOICE OR EQUIVALENT DOCUMENTATION; AND
3. THE DEFECTIVE GOODS ARE PROMPTLY RETURNED BY BUYER, AT THEIR SOLE EXPENSE TO BIOMARINE AT: 456 CREAMERY WAY, EXTON, PA 19341 USA; AND
4. THE EQUIPMENT HAS NOT BEEN ALTERED; AND
5. THE DEFECT OCCURS UNDER CIRCUMSTANCES OF PROPER USE IN ACCORDANCE WITH ALL INSTRUCTIONS AND MANUALS PROVIDED TO THE BUYER.

It shall be the responsibility of the buyer to read carefully and abide by all instructions provided to the buyer in the instruction manual or elsewhere. If buyer, and the employees of the buyer, did not abide by such instructions, then the alleged defect shall not be deemed to have arisen under circumstances of proper use. The instructions for use of the goods reflect the opinion of experts based on field use and tests. The instructions should be followed carefully. It is impossible, however, to eliminate all risks inherently associated with the use of the goods. Unintended consequences may result because of factors as weather conditions, the presence of other materials, or the use or manner of application of the goods, all of which are beyond the control of Biomarine. The buyer shall assume all such risks.

Buyer shall be responsible for insuring that the goods are functioning properly at all times and shall not use any goods, which are not functioning properly. If buyer uses goods when they are not functioning properly, then buyer agrees to defend, indemnify and hold Biomarine harmless against all losses, damages, and injuries to persons or property as a result of the use of the malfunctioning goods.

These warranties do not extend to the goods if they have been subjected to misuse, neglect, or accident, including extended exposure to direct flames and/or caustic chemical products, after its delivery to buyer, nor does it extend to any item that was modified or altered after its delivery to buyer.

IN NO EVENT WILL BIOMARINE BE LIABLE FOR ANY LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE DEFECTS OR FROM THE USE OF THE GOODS OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, WHETHER IN CONTRACT, TORT, OR OTHERWISE, OR FOR PERSONAL INJURY OR PROPERTY DAMAGE OR ANY FINANCIAL LOSS.

Any description of the goods contained in any documents to which these warranty provisions related, including any quotations or purchase orders relating to the goods being delivered to buyer, are for the sole purpose of identifying the goods, and any such description, as well as any sample or model which may have been displayed to or seen by buyer at any time, have not been made part of the basis of the bargain and have not created or amounted to any warranty, express or implied, that the goods would conform to any such description or any such sample or model.

EXCEPT AS SPECIFICALLY SET FORTH IN THESE WARRANTIES, BIOMARINE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING BY LAW, CUSTOM, CONDUCT OR USAGE OF TRADE, INCLUDING WARRANTIES AS TO MERCHANTABILITY, OR AS TO THE FITNESS OF THE GOODS FOR ANY PARTICULAR USE OR PURPOSE, AND ANY WARRANTIES INCLUDING WARRANTIES AS TO MERCHANTABILITY AND FITNESS FOR PARTICULAR USE OR PURPOSE AND THE RIGHTS AND REMEDIES PROVIDED HEREIN ARE EXCLUSIVE. THESE WARRANTIES SHALL RUN TO THE BUYER ONLY AND SHALL NOT BE CONSTRUED AS A CONDITION.

Biomarine does not warrant that the goods are free from the rightful claim of any third person by way of infringement or patents or other proprietary information or disclaims any warranty against such infringement.

The terms of these warranties shall apply to the product sold by Biomarine, except absorbent, filters and anti-fog lens inserts which are considered "consumable item", and as such are not covered by the terms of these warranties. No waiver, alteration, or modification of the terms of these provisions shall be valid unless in writing and signed by an executive officer of Biomarine.

These warranties shall not apply to accessories or devices purchased by Biomarine and attached to or made part of the goods except that Biomarine warrants the (i) the installation of such items in the completed product shall so conform to the installation instructions of the manufacturers thereof as not to invalidate such applicable warranties on such items as are obtained by Biomarine from such manufacturers, and (ii) the workmanship incorporated in such installation shall be free from defects.

Illustrated Parts List

ITEM #	QTY.	PART NUMBER	DESCRIPTION
REF	-	B6-02-5002-86-0	110/120 Vac North American Drying System-Complete ¹
REF	-	B6-02-5002-87-0	Manifold Assembly Complete ²
1a	1	B2-06-6001-94-0	110/120 VAC North American Blower/Dryer Unit ³
1b	1	User Supplied	Other Power Configuration Blower/Dryer Unit ⁴
2	7	B2-06-6002-19-0	Turn Key Hose Clamp-Small
3	1	B2-02-7001-90-0	Connection Hose
4	1	B2-06-6002-30-0	Turn Key Hose Clamp-Large
5	1	B6-02-5002-87-1	Replacement Manifold Block
6	6	B2-06-6001-92-0	Manifold Port Cap
7	1	B5-06-6000-38-0	User Manual (not depicted)

Note:

1. Complete dryer system includes all depicted components. Configured for 110/120 Vac operation with North American power cord and plug.
2. Complete manifold assembly includes all depicted components with the exception of the blower unit.
3. Blower unit may vary from depiction below.
4. User-supplied blower units shall meet requirements set forth in this manual.

