



# BioPak 240

## BioPak 240 Benchman's Practical Test

### Instructions for Bugging

1. Twist the lower left hand strap on the facemask. Unbuckle the strap completely, turn it 180° and reinsert it into the buckle. While this may seem like an inconsequential “Bug,” when the BioPak 240 is worn for 4 hours this little problem could become very annoying to the wearer.
2. Loosen the Diaphragm Clamp (Part #B2-06-6000-19-0) so that the BioPak 240 leaks when tested with the Balloon Test Fixture.
3. Remove the shoulder strap retainer cap (Part #B2-02-4100-22-0) from the upper left side shoulder harness retainer. Reinstall the retainer pin without this end cap. Then reinstall the center section assembly.
4. Remove the Demand Tube O-Ring (Part #B4-04-7070-00-0) from the Demand Tube Male Connector Body on the side of the Breathing Chamber. Wipe the O-Ring clean of all traces of lubricant. Store the O-Ring in a clean plastic envelope.
5. Install a dry scrubber tray O-ring (Part #B4-04-7060-02-0). Remove the old O-ring and wipe all of the lubricant from the O-ring. Reinstall the dry O-ring.
6. Fill the scrubber tray only ½ full with Limepak (Part #B6-02-5000-32-0).
7. Move the alarm tone stem out of calibration.  
Loosen the set screw in the alarm, slide the alarm tone stem down to cover the alarm hole, retighten the set screw in this position.
8. Slide the anti-rotation collar (Part #B2-02-7100-05-0) completely away from the thumbwheels on the side of the breathing chamber.
9. Completely unscrew the bypass line thumbwheel, the black fitting at the top of the bypass tube (Part #Bb2-02-5000-06-0) and drop down bypass tube so it is visibly separated from the breathing chamber.

10. Clog the short Cooling Canister Inhalation Hose (Part #B6-02-5000-22-0 or B6-02-5000-22-1), between the Breathing Chamber and the Coolant Canister. Using a screwdriver or a tongue depressor, place a paper towel wad in the middle of this short hose so that the clog does not show.

### **BioPak 240 Benchman's Practical Test Parts**

The trainees may request the required parts from the “storeroom” by using the correct part number. If trainees request a part that is not part of the practical test, the trainer will reply “that part is not in stock.”

Part #B2-02-4100-22-0 Harness Retainer Cap

Part #B4-04-7070-00-0 Demand Tube O-Ring

Part #B6-02-5000-32-0 Limepak

### **BioPak 240 Benchman's Practical Test Tools**

The following items must be supplied for a BioPak 240 Benchman's test:  
BioPak 240 Manual

*Included with BioPak 240 Service Kit*

Pressure Test Balloon Fixture

Pressure Test Key

Schraeder Valve Tool

Tongue Depressor

Bottle of LeakTec

Flow Meter

*Recommended Benchman's Tools*

Vent Valve Tool

ByPass Valve Tool

Hose Coupler

*Typical Benchman's Hand Tools*

Small flat bladed screwdriver

Medial flat bladed screwdriver

Medium Phillips bladed screwdriver

5/16” open ended wrench

7/16” open ended wrench

1/2” open ended wrench

9/16” open ended wrench

5/8” open ended wrench

1/16” Allen wrench

### **Benchman's Practical Test Sheet**

The apparatus is supposedly “ready for immediate use.” However, there are a number of “BUGS” or problems with the apparatus that should be corrected before the apparatus should be used. Scoring on this practical exam is weighted to emphasize how much the problem or bug can affect the safety of a potential BioPak 240 user. You are provided with all the necessary tools,

testing equipment and a complete BioPak 240. A current BioPak 240 Operation and Maintenance Manual will be provided. The examiner will, upon request from the examinee, supply any needed part requested if it is on the “Bug” list. If a part is not on the “Bug” list, then the examiner will reply “that part is not available.” One hour is provided to successfully complete this test.

*Instructions*

Perform or simulate the performance of all monthly tests. List and number all “Bugs” found in the BioPak 240 in the left-hand column. List corrective action you have taken in the next column. List part numbers of any parts you required to fix the BioPak 240 in the third column. BE AS SPECIFIC AS POSSIBLE IN YOUR DESCRIPTION OF BUGS AND CORRECTIVE ACTIONS; USE THE OPERATION AND MAINTENANCE MANUAL FOR THE CORRECT PART NAMES AND NUMBERS. PRINT YOUR ANSWERS CLEARLY. Please print your name clearly in the space provided below:

Name:



*Bug Found*

*Parts Needed*

*Corrective Action Taken*



# BioPak 240

## BioPak 240 Benchman's Practical Test Score Sheet

Test Subject's Name:

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1. Twist the lower left-hand strap on the facemask
  - Fail to list bug 1
  - Fail to fix bug 1
  
2. Loosen the Diaphragm Clamp (Part #B2-06-6000-19-0)
  - Fail to list bug 1
  - Fail to tighten clamp 15
  
3. Remove the shoulder strap retainer cap (Part #B2-02-4100-22-0)
  - Fail to list bug 1
  - Fail to list part needed 1
  - Fail to fix bug 2
  
4. Remove the Demand Tube O-Ring (Part #B4-04-7070-00-0)
  - Fail to list bug 1
  - Fail to list part needed 1
  - Fail to lubricate O-ring or  
Use of incorrect Silicon Lubricant 2
  - \*Fail to fix bug 5
  
5. Install a dry scrubber tray O-ring (Part #B4-04-7060-02-0)
  - Fail to list bug 1
  - Fail to lubricate O-Ring 1
  
6. Fill the scrubber tray only ½ full with Limepak (Part #B6-02-5000-32-0)
  - Fail to list bug 1
  - Fail to list part needed 1
  - \*Fail to fill scrubber tray 5
  - Incomplete fill of scrubber tray (4)
  
7. Move the alarm tone stem out of calibration

- |  |   |
|--|---|
| Fail to list bug   | 1 |
| Fail to fix bug  | 1 |
| 8. Slide the anti-rotation collar completely away from the thumbwheels |   |
| Fail to list bug   | 1 |
| Fail to fix bug  | 1 |
| 9. Completely unscrew the bypass line thumbwheel                       |   |
| Fail to list bug   | 1 |
| *Fail to fix bug   | 5 |
| 10. Clog the short exhalation hose                                     |   |
| Fail to list bug   | 1 |
| *Fail to fix bug   | 5 |

Monthly Service Checks

- |  |   |  |
|--|---|--|
| 1. Complete Visual Inspection            |   |  |
| Failed to perform (or announce) the test | 5 |  |
| 2. Plumbing (High Pressure) Leak Test    |   |  |
| Failed to perform (or announce) the test | 5 |  |
| 3. Constant Flow Check                   |   |  |
| Failed to perform the test               | 5 |  |
| Improper test procedure                  | 2 |  |
| 4. Breathing System (Balloon) Test       |   |  |
| Failed to perform the test               | 5 |  |
| Improper test procedure                  | 2 |  |

FAILED TO HAVE BIOPAK 240 OPERATIONAL, OR A SERIOUS, LIFE-THREATENING BUG (denoted by an “\*” above) WAS NOT FIXED:30

MAXIMUM NUMBER OF DISCOUNTS: 100

TEST SUBJECT’S TOTAL DISCOUNTS: \_\_\_\_\_

