

# 2016 Tri State Post No. 6

## 240 R Bio Pak 240 R Bench Contest



**Table Layout for Bio-Pak 240-R Contest  
2016 Contest Year**

<p><b>Test Apparatus With Upper Housing And Hose Connector Installed</b></p>	<p><b>Test Apparatus Mask</b></p> <hr/> <p><b>Test Kit</b></p>	<p><b>Upper Housing With Parts</b></p>	<p><b>Visual Apparatus</b></p>
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**Bio Pak 240 R  
Post # 6 Bench Contest**

**VISUAL**

**Missing Large O-Ring**

**Missing Mask Adapter O-Ring**

**Missing Screw Harness Shoulder**

**Missing Washer Harness Shoulder**

**Loose Screw Waist Belt Bottom Left**

**Missing Washer Waist Belt Top Right**



**TESTER**



**Missing Flow Restrictor Audible**

**Missing Oxygen Cylinder Seal Audible**

**Missing Large O-Ring**

VISUAL APPARATUS CHECKS		TEST APPARATUS	
	Check if ok		CONNECTIONS
	UPPER HOUSING		Vent Valve Assembly - Hand Tight
	LOWER HOUSING		Diaphragm Worm Gear - Wrench Tight
	Harness Assembly		Flow Restrictor - Wrench Tight
	External Gage		Breathing Hose Worm Gear - Wrench Tight
	O2 Regulator / Seal		Add / Constant Fittings - Hand Tight
	RMS		Center Section Lid - Hand Tight
	CENTER SECTION ASSEMBLY		Center Section Push Pins - Hand Tight
	Diaphragm		Cylinder Connection - Hand Tight
	<b>Check O-Ring for damages/lubrication</b>		Adapter to Facepiece - Hand Tight
	<b>Sealing Edges</b>		Test Fixture Connections - Hand Tight
	Demand Valve Assembly		Check if ok
	Moisture Pads		<b>Zero Adjust the Mag. Gauge</b>
	PCM		CONSTANT FLOW TEST
	CARBON DIOXIDE SCRUBBER		Flow Between 1.6 and 2.4 Lpm - State Reading
	Defects / Damage		DEMAND VALVE TEST
	Gasket		EMERGENCY BYPASS TEST
	Expiration Date		VENT VALVE TEST
	CENTER SECTION LID ASSEMBLY		At or below 2 inches wg - State Reading
	Examine for defects / damage		LOW PRESSURE LEAK TEST
	<b>Sealing Edges</b>		RMS GAUGE AND TRIM TEST
	Ice Canisters		Observe lights/gauges +/- 10% - State Reading
	Coolant Lids		HIGH PRESSURE LEAK TEST
	CYLINDER TEST		LOW PRESSURE ALARM TEST
	Hydrostatic Test Date		Alarm 650-1000 psig - State Reading
	Cylinder Pressure on Gauge		Power down below 25 psig
	Pressure Rating on Cylinder	VI	C
	HOSES		<b>VISUAL</b>
	Sealing Edges		Missing Large O-Ring
	Stretching of Hoses for Pliability		Missing Mask Adapter O-Ring
	Adapter Assy O-ring damage & lubrication		Missing Screw Harness Shoulder
	FACE PIECE TEST		Missing Washer Harness Shoulder
	Head Strap Assembly		Loose Screw Waist Belt Bottom Left
	Mask Body / Nose Cup	VI	C
	Sealing Edges		<b>TESTER</b>
	Speech Diaphragms		Missing Flow Restrictor Audible
	Lens / Anti-Fog Insert		Missing Oxygen Cylinder Seal Audible
	<b>Magnetic Wiper</b>		Missing Large O-Ring

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# **BIO-PAK 240-R**

## **VISUAL APPARATUS (BREAK DOWN)**

**Upper Housing Assembly-Removed**  
**Hoses-Removed**  
**Coolant Lids and Ice Canisters - Removed**  
**Center Section Lid Assembly - Removed**  
**Moisture Pads - Removed**  
**Carbon Dioxide Scrubbers and Gasket - Removed**  
**PCM Canister - Removed**  
**Loosen (But do not remove) Flow Restrictor**  
**Center Section – Removed**  
**Diaphragm and worm gear-Removed**  
**Vent Valve Assembly - Removed as a unit**  
**Oxygen Cylinder-Removed**

## **BIO-PAK 240-R TOOL KIT**

**Leak Check Adapter Fitting**  
**Flow Test Fixture**  
**Test Key**  
**Vent Valve Hand Wrench**  
**Center Section Pneumatic Plug**  
**Regulator Wash Cover**  
**Combination Pick Tool**  
**#00 Phillips Head Screwdriver**  
**#1 Phillips Head Screwdriver**  
**#2 Phillips Head Screwdriver**  
**1/4" Hex Driver**  
**3/16" Nut Driver**  
**5/16" Nut Driver**  
**9/32" Nut Driver**  
**3/8" x 5/16" Open End Wrench**  
**7/16" Combination Wrench**  
**1/2" Combination Wrench**  
**5/8" x 9/16" Open End Wrench**  
**Stop Watch**  
**Bypass Valve Tool**

## STATEMENT TO BENCH CONTESTANT

The bench participant will be provided with two Bio-Pak 240- R apparatus (one disassembled, one assembled), a stopwatch, leak detector fluid, test kit, and tool kit. Only the tools and fluid provided will be used for testing and assembly of the apparatus. The work at the bench will consist of:

1. A visual examination of a disassembled Bio-Pak 240-R and the proper assembly and preparation for use in rescue work. This will include correcting any predetermined problem(s) so that the apparatus is in proper working order. Simulating defogging of the facepiece lens will be done as a part of the visual examination. This visual examination, correcting predetermined problem(s), and proper assembly can be done at any time allowed for the working of the problem.
2. Test the assembled Bio-Pak 240-R apparatus with a tester, and correct the predetermined problem(s) so that the apparatus is in proper working condition. Except for removing the facepiece storage plug from the breathing hoses, the assembled Bio-Pak 240-R apparatus cannot be disassembled to look for problems, until the apparatus fails a test. When testing is completed on the assembled Bio-Pak 240-R apparatus, the hoses shall be removed from the tester, connected to the facepiece, and the upper housing installed. This shall be done before the clock is stopped.

When an unplanned deficiency is encountered in the apparatus, the participant will be notified by the judge(s) that the deficiency is not part of the problem. The judge will stop the clock and any time used to correct the deficiency will not be charged to the working time.

A maximum of 30 minutes will be allowed to complete the problem. The judge will tell you when 25 minutes has passed. At the completion of the problem, the judge(s) and the participant will note the working time of the problem with the official timekeeper. Work done after the clock is stopped will not be recognized.