

**STATEMENTS OF FACT
BENCH BIOPAK 240-R CONTEST**

1. Use only exact replacement parts in the configuration as specified by the manufacturer.
2. The battery is to be changed in fresh air only.
3. MSHA approved for use with one of the following 9-Volt batteries only:
 - Eveready
 - Panasonic
 - Rayovac
 - Duracell
4. Never substitute, modify, add or omit parts.
5. Prior to using the BioPak 240 Revolution it must be determined that the user is medically fit.
6. Always handle oxygen cylinders with care to prevent damage.
7. Do not open the cylinder valve in the presence of open flame, sparks or high radiant heat.
8. Oxygen will enhance the combustion of other materials so that materials that normally will not burn in air may burn in oxygen-rich atmospheres; and, materials that do burn in air will burn more vigorously and at a higher temperature in oxygen-rich atmospheres.
9. Oxygen will not cause materials to ignite without the presence of an ignition source.
10. The use of an SCBA will add to the workload and stress of the user.
11. The BioPak 240 Revolution is suitable for respiratory protection during entry into and escape from oxygen deficient atmospheres with a temperature range of 5 degree F (-15C) to 110 degree F (43C).
12. The BioPak 240 Revolution is approved when the oxygen cylinder is fully charged with compressed medical or aviation grade oxygen at 3000 psi.

13. Allow the oxygen cylinder to cool after filling to determine the correct pressure.
14. A foreign gas may cause cylinder corrosion.
15. Always check for a current hydrostatic test date.
16. DOT requires carbon fiber wrapped aluminum cylinders be tested by an approved facility on a 5-year cycle from the date of manufacture.
17. An unapproved facepiece will compromise the protection provided to the user by the SCBA.
18. A good facepiece seal is important to achieving full protection and proper SCBA duration.
19. Users should never wear the BioPak if they have any facial hair.-
20. Replace the battery when the low battery alarm has activated, after 200 hours of use or every 6 months whichever comes first.
21. The connectors of the monitoring device may only be connected to a Biomarine BioPak 240R breathing Apparatus oxygen regulator, manifold block and breathing chamber.
22. The fiber optic cable may only be connected to the BioPak 240R remote gauge assembly.
23. Turn-Around maintenance procedures should be performed as soon as possible after each use of the SCBA.
24. If the lower housing is being washed, always leave the cylinder securely attached to the regulator so that the area remains clean, dry and free of contamination.
25. The usual scrubber consists of limestone and a plastic core. Do not reuse previously used CO₂ absorbent cartridges or the rubber gaskets.
26. DO NOT submerge the Alarm Module during turn-around maintenance.
27. The RMS Module IS NOT watertight with the TRIM light pipe connector or the battery door removed.

28. The lower housing should be cleaned with the cylinder securely attached to the regulator.
29. If the cylinder is removed for washing you Must Attach the Regulator Wash Cover provided in the test kit to seal off the regulator from contamination while washing the lower housing.
30. The facepiece should be sprayed with Multi-Wash "Disinfectant and rinsed with clean water.
31. Allow all components to remain wetted by the cleaning solution a minimum of 10 minutes.
32. Thoroughly rinse all components several times with clean water to remove cleaning solution residue.
33. C.O.P.D. could limit or prevent the use of the BioPak 240 Revolution.
34. Freeze the ice canisters for a minimum of 8 hours before use at a maximum temperature of 10 degrees F (-12 C).
35. Apply anti-fog solution or water to both halves of the chamois before every use to ensure mask lens do not scratch.
36. Failure to install the Phase Change Material Canister into the center section prior to use will result in increased breathing gas temperature.
37. Installing wet sponges and closing up the SCBA may lead to mold growth during extended storage periods.
38. To prevent mold growth, install the sponges in a totally dry state and moisten sponges just prior to SCBA use.
39. Do not expose opened CO₂ scrubber cartridges to ambient air for more than 20 minutes.
40. Excess exposure of ambient air with the CO₂ scrubber cartridges can adversely affect the optimal absorption process and increase the potential for CO₂ entering the breathing loop.

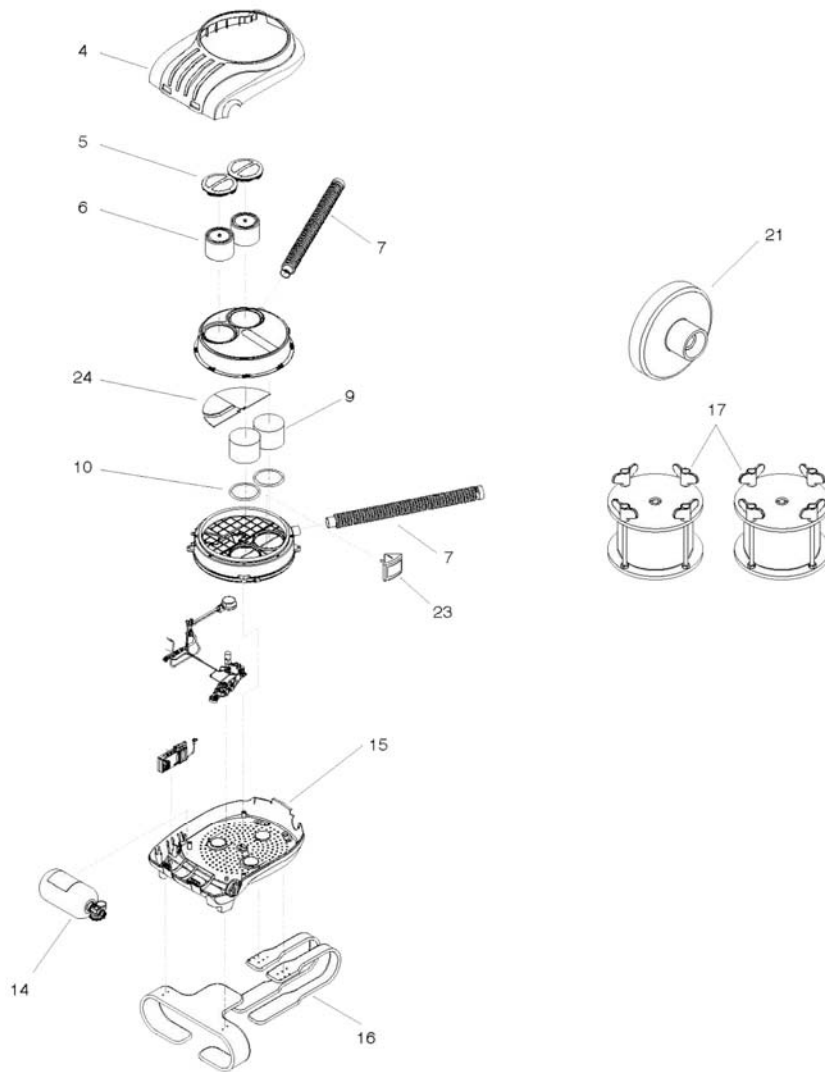
41. Install each CO₂ canister into the SCBA so that the red end cap is visible on the top side of the canister.
42. The hoses and facepiece adapter MUST be installed with the breathing gas directional arrows facing UP.
43. To get the most accurate flow meter reading you must have a minimum of 1500 psi (104 bar) in the cylinder.
44. The use of non-approved flow meters will result in inaccurate flow readings.
45. Over pressurization of the SCBA with the test keys installed beyond 8" of water column could damage the vent valve and diaphragm.
46. The battery has completed its battery check and has battery life for a full 4 hour mission if you receive a green flashing light.
47. A low battery alarm is indicated by a Red, Green, Blue light sequence followed by a short alarm chirp any time the battery will not complete a four-hour mission.
48. The oxygen cylinder pressure gauge and the RMS gauge pressure readings shall match within +/- 10%.
49. A properly stored SCBA will be one that has been thoroughly cleaned, dried, tested and all items on the Turn-Around Maintenance Tag properly documented.
50. Any SCBA that fails testing must be clearly identified or "Tagged-Out" of service.
51. If a quick Turn-Around Maintenance has been performed, the SCBA will function and is designed to work wet.
52. In addition to normal Turn-Around Maintenance, the SCBA shall be visually inspected and high-pressure tested on a monthly basis if the SCBA is in constant use once a month or placed into long-term storage.
53. Constant use is defined as being in use at least once a month
54. The RMS will automatically power down once the system pressure has dropped below 25 psig.

55. NEVER Pry an o-ring from its seat with a screwdriver. Carefully remove the o-ring by hand or with the pick tool provided in the tool kit.
56. Cristo-Lube and Dow-111 are the only o-ring lubricants that shall be utilized on the SCBA components.
57. NEVER Use Dow 111 on any o-ring seal that comes in contact with high-pressure oxygen.
58. There are no user serviceable components on the oxygen cylinder assembly.
59. Other than replacement of the battery, there are no user serviceable components in the RMS gauge, alarm module or TRIM.
60. The RMS alarm module is sealed to prevent entry of moisture and to provide immunity against RFI/EMF interference.
61. In the event the SCBA fails flow testing during Turn-Around or Long-term Maintenance the flow restrictor is most likely clogged and will require replacement.
62. Not achieving full 4-hour duration of BioPak during use could be caused by poor or leaking facepiece seal.
63. Not achieving full 4-hour duration of BioPak during use could be caused by the oxygen cylinder being opened prior to donning facepiece.
64. Not achieving full 4-hour duration of BioPak during use could be caused by the bypass valve over used or utilized to attempt to clear facepiece lens.
65. Not achieving full 4-hour duration of BioPak during use could be caused by the user being under heavy workloads or extreme ambient conditions.
66. Not achieving full 4-hour duration of BioPak during use could be caused by a leak in the BioPak.
67. Not achieving full 4-hour duration of BioPak during use could be caused by a pressure Regulator Failure.
68. High breathing resistance during exhalation could be caused by the facepiece exhalation valve sticking closed.

69. High breathing resistance during exhalation could be caused by diaphragm springs in breathing chamber not properly seated or damaged.
70. High breathing resistance during exhalation could be caused by vent valve in breathing chamber not opening properly.
71. High breathing resistance during inhalation could be caused by the facepiece inhalation check valve sticking closed.
72. High breathing resistance during inhalation could be caused by the diaphragm springs in breathing chamber are missing or damaged.
73. High breathing resistance during inhalation could be caused by the demand valve in breathing chamber has failed.
74. Alarm indications of remaining service time not functioning correctly could be caused by the monitoring system battery has expired.
75. Breathing gas uncomfortably warm during use could be caused by the frozen ice canisters have not been installed into the coolant shells.
76. BioPak weight, ready to use is 34 pounds.
77. BioPak tidal volume is over 6 liters.
78. BioPak Carbon Dioxide Scrubber is Dual, single use Calcium Hydroxide cartridges, non-dusting, non-channeling, non-hazardous.
79. Use only exact replacement parts in the configuration as specified by Biomarine.
80. Do not allow oil, grease or other foreign materials to come in contact with cylinder, cylinder valve or cylinder pressure regulator to prevent possible ignition.
81. A clean-shaven user will significantly increase his chances of achieving a good facepiece seal.
82. Do not change battery in hazardous area.
83. The low oxygen alarm must activate between 650-750 psig and is indicated by a flashing red light and audible alarm.
84. The CO₂ Scrubber Gasket should be replaced after 1 use.

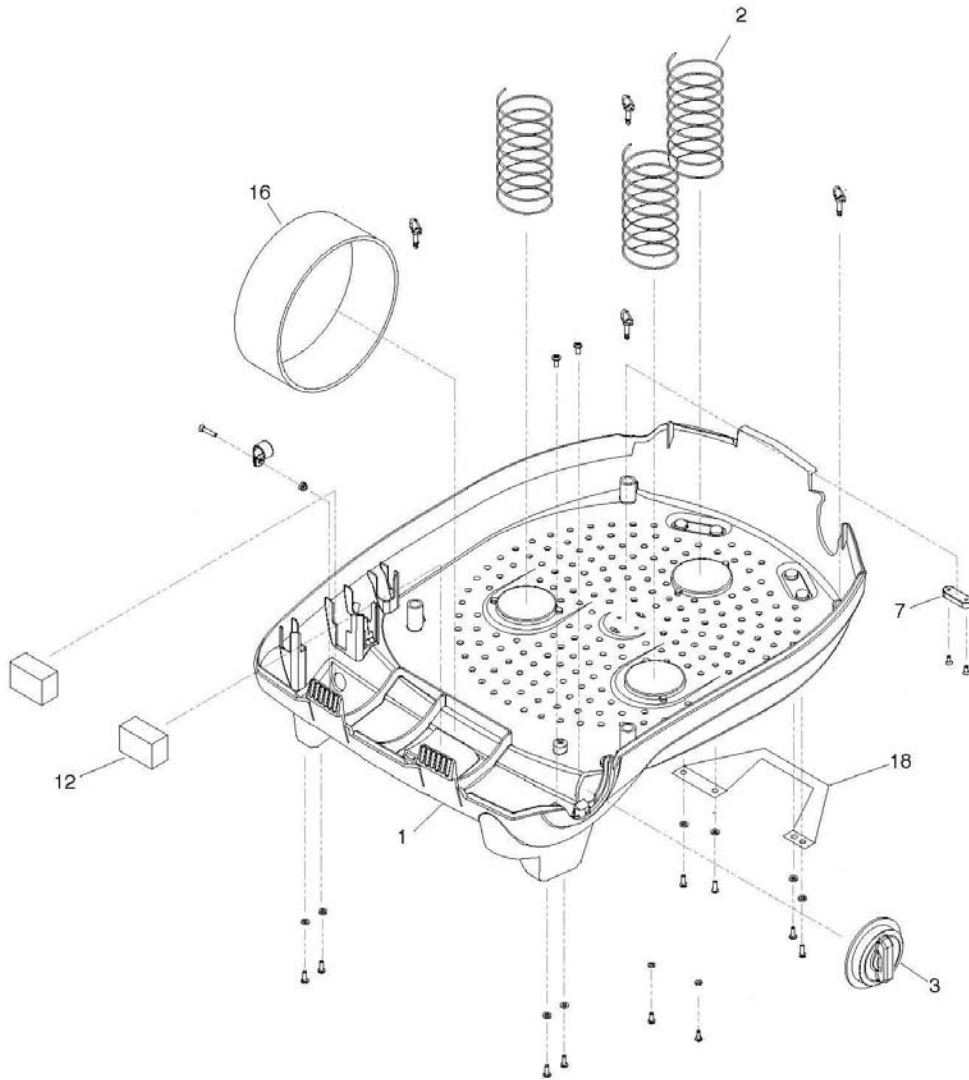
85. The CO₂ Scrubber should be replaced after 1 use.
86. The facepiece Anti-Fog Lens should be replaced after approximately 20 uses.
87. The Oxygen Seal Washer should be replaced as needed.
88. The Center Section Lid O-Ring should be replaced as needed.
89. The BioPak 240 Revolution has certification approvals for a Hydration System Kit and a Facepiece Magnetic Wiper.
90. Mask fogging during use could be caused by the Anti-fog lens insert missing or damaged.
91. Mask fogging during use could be caused by Anti-fog agent not applied or applied incorrectly.
92. Breathing gas uncomfortably warm during use could be caused by the PCM canister.
93. Facepiece failing positive and/or negative testing during user donning could be caused by the inhalation and/or exhalation check valves missing in the facepiece.
94. Facepiece failing positive and/or negative testing during user donning could be caused by the inhalation and/or exhalation check valves damaged in the facepiece.
95. Facepiece failing positive and/or negative testing during user donning could be caused by poor facepiece fit.
96. A Pacemaker or other Cardiac Condition could limit or prevent the use of the BioPak 240 Revolution.
97. Breathing difficulties could limit or prevent the use of the BioPak 240 Revolution.
98. Claustrophobia or anxiety when wearing a SCBA could limit or prevent the use of the BioPak 240 Revolution.
99. X-Ray evidence of Pneumonia could limit or prevent the use of the BioPak 240 Revolution.
100. Epilepsy-Grand Mal or Petit Mal could limit or prevent the use of the BioPak 240 Revolution.

BioPak 240 Revolution Complete



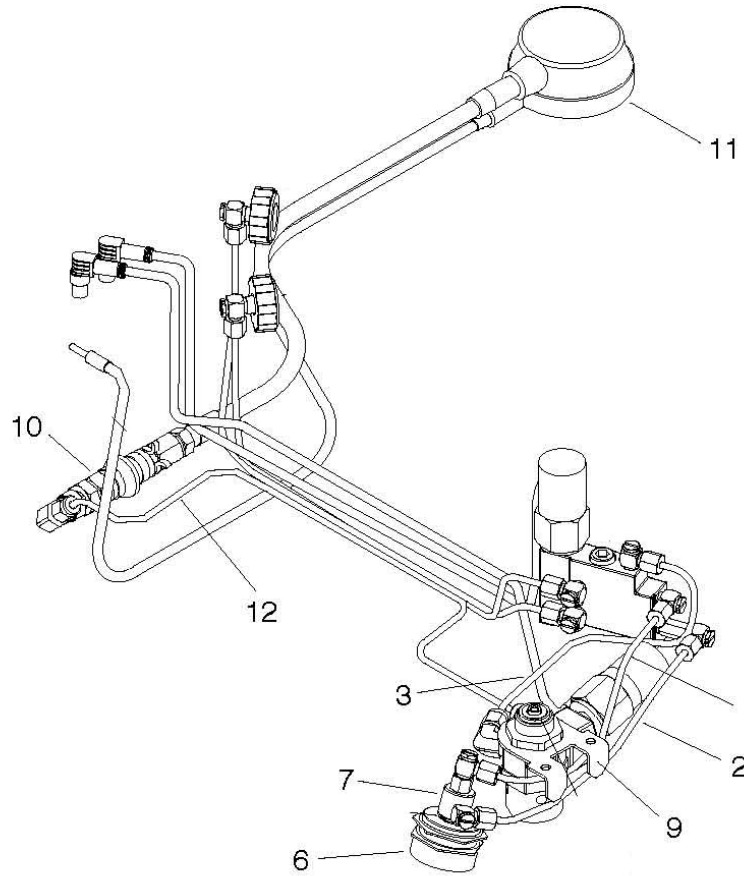
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
4	Upper Housing Assembly	16	Harness Assembly
5	Coolant Lid	17	Ice Canister Freeze Form
6	Ice Canister	21	Facepiece Storage Plug
7	Breathing Hose	23	(PCM) Heat Exchanger
14	O ₂ Cylinder	24	Moisture Absorbent Pad Set
15	Lower Housing Assembly		

Lower Housing Assembly



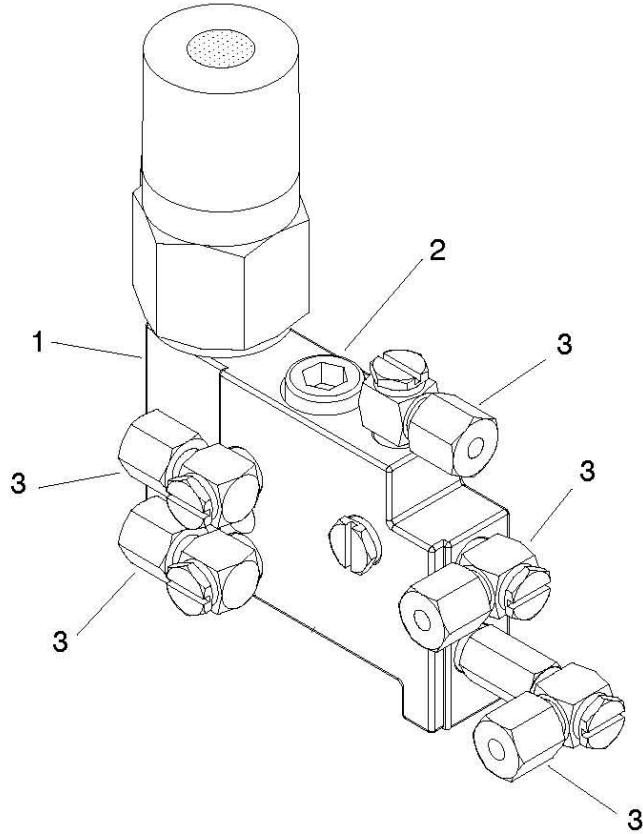
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Lower Housing Shell	12	Latch Foam Pad
2	Diaphragm Springs	16	Oxygen Cylinder Hold-Down Strap
3	External Oxygen Knob	18	Carrying Handle
7	Vent Spacer		

Pneumatic Assembly



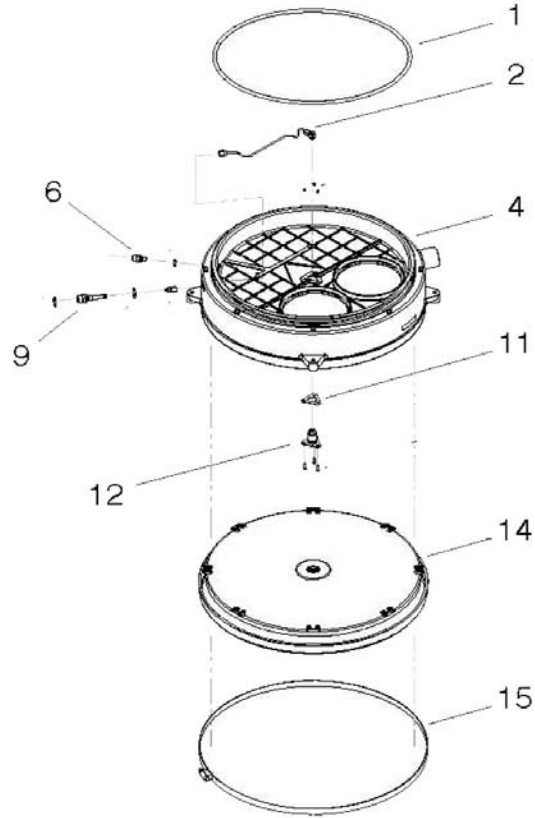
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Bypass Feed Tube	9	Oxygen Regulator Assembly
2	Bypass Return Tube	10	Remote Gauge Shut Off Assembly
3	Oxygen Feed Tube	11	Remote Gauge Assembly
6	Bypass Valve Push Button	12	Remote Gauge Feed Tube Assembly
7	Bypass Valve		

Manifold Assembly



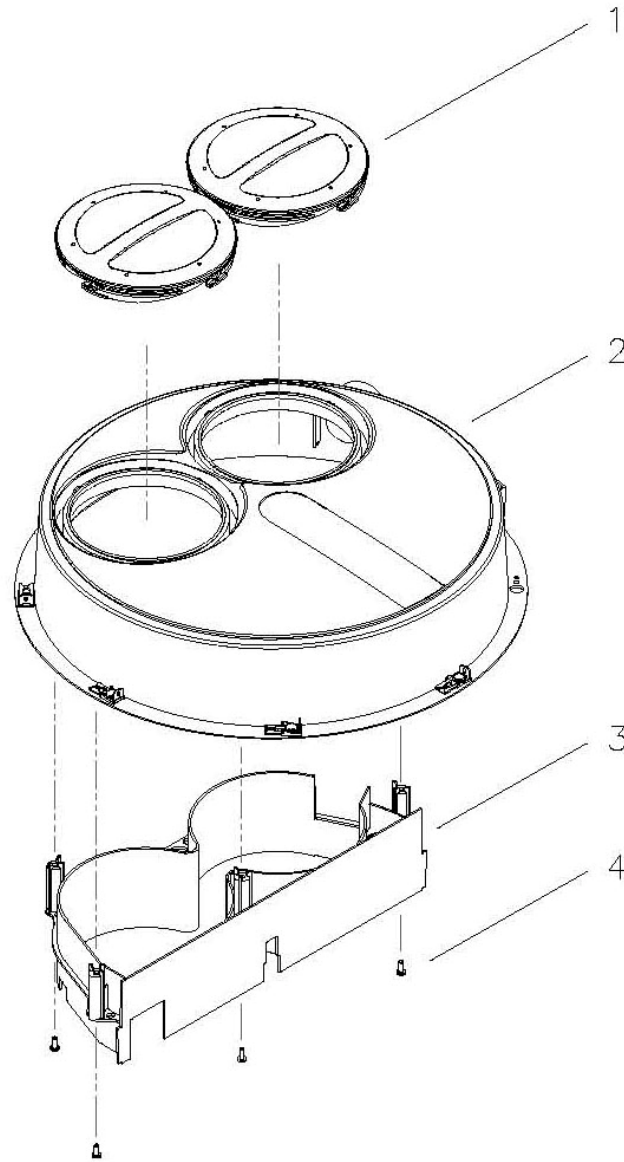
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Manifold Block w/ Pressure Switch	3	Swivel Elbow Fitting
2	Constant Add Flow Restrictor Assembly		

Center Section Assembly



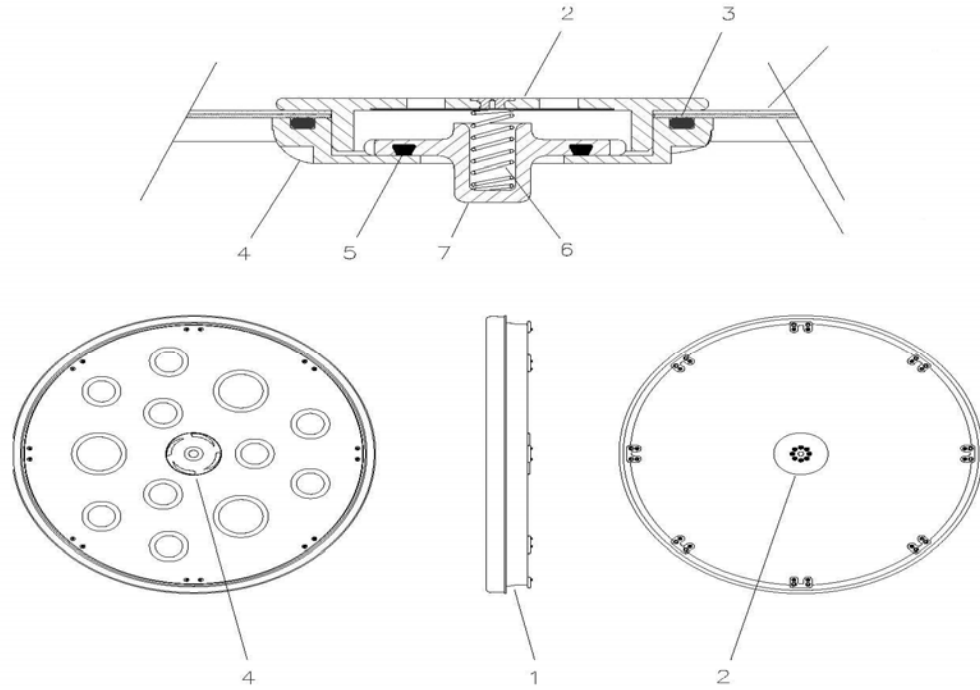
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Lid O-Ring	11	Demand Valve Gasket
2	Demand Feed Tube	12	Demand Valve Assembly
4	Center Section Body Assembly	14	Flexible Diaphragm
6	Constant Add Fitting	15	Diaphragm Clamp
9	Demand Add Fitting		

Center Section Lid Assembly



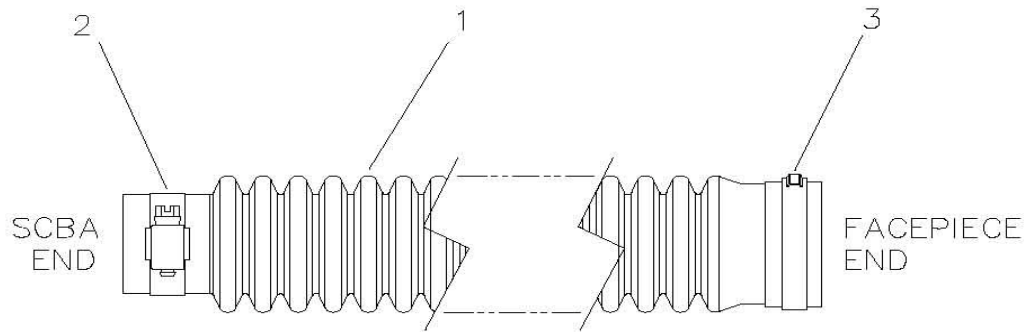
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Coolant Lid	3	Flow Baffle
2	Center Section Lid	4	Self-Tapping Screws

Diaphragm Assembly



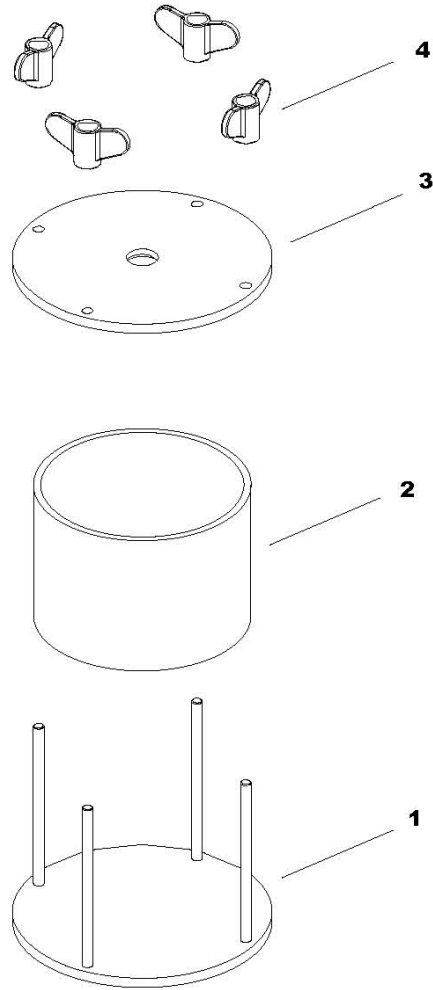
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Flexible Diaphragm	5	Vent Seat O-Ring
2	Vent Cap	6	Vent Valve Spring
3	Vent Body O-Ring	7	Vent Valve Seat
4	Vent Body		

Breathing Hose



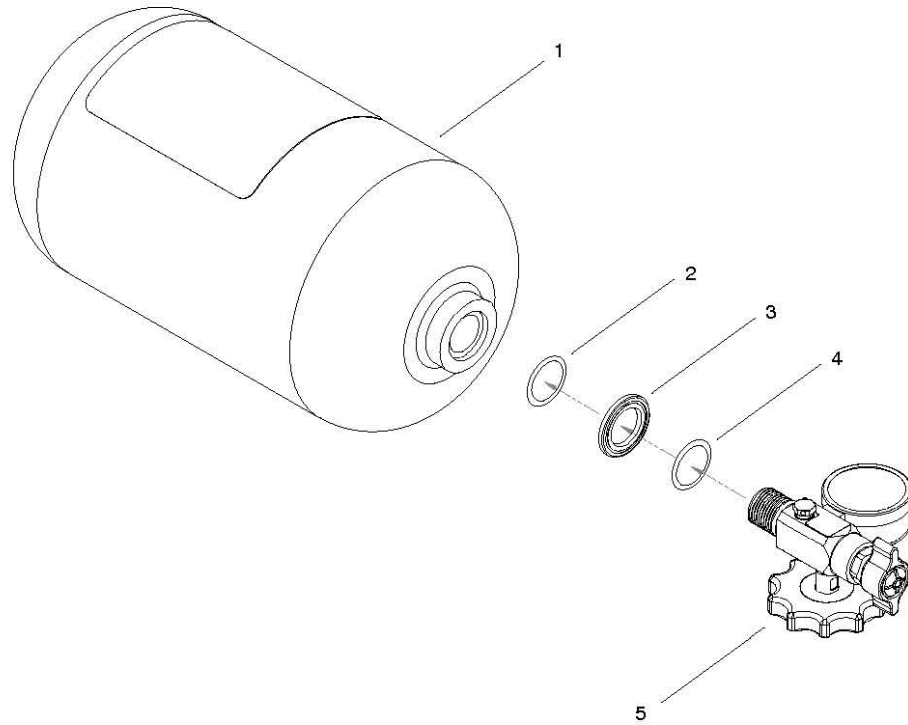
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Breathing Hose	3	Stepless Ear Clamp
2	Worm Gear Hose Clamp		

Ice Canister Freeze Form



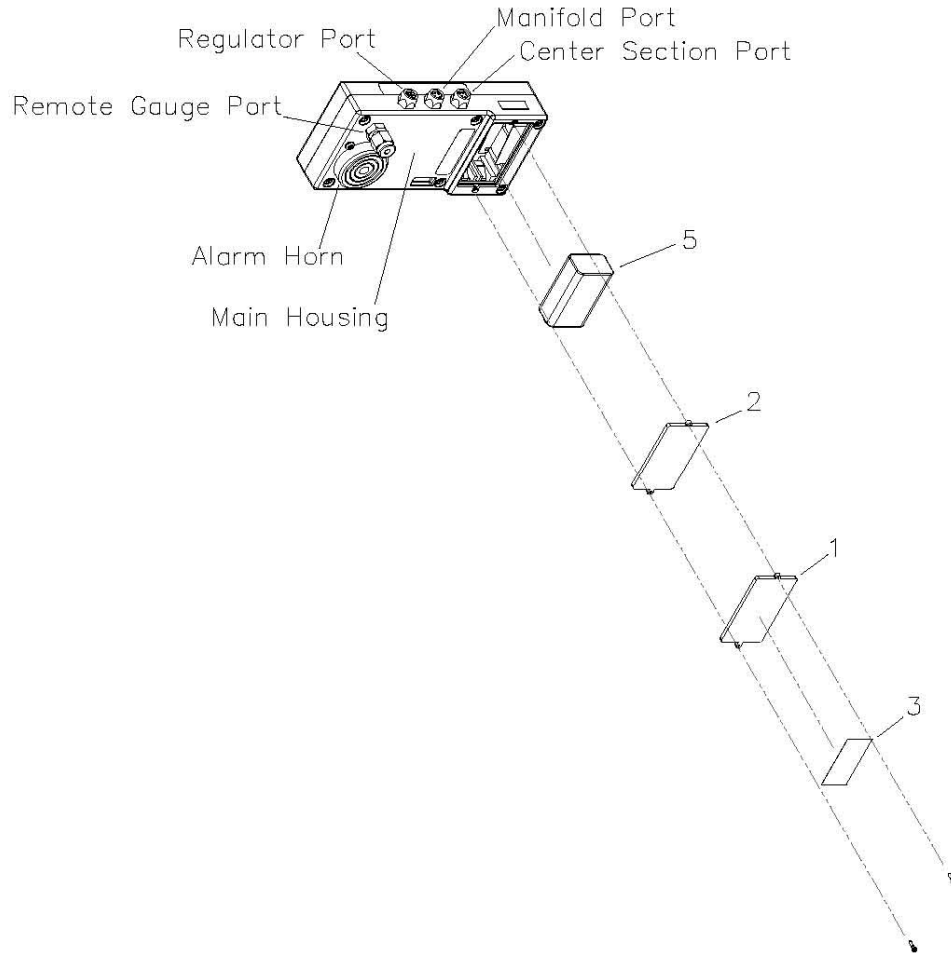
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Base Assembly	3	Top Plate
2	Freeze Tube	4	Wing Nut

Oxygen Cylinder Assembly



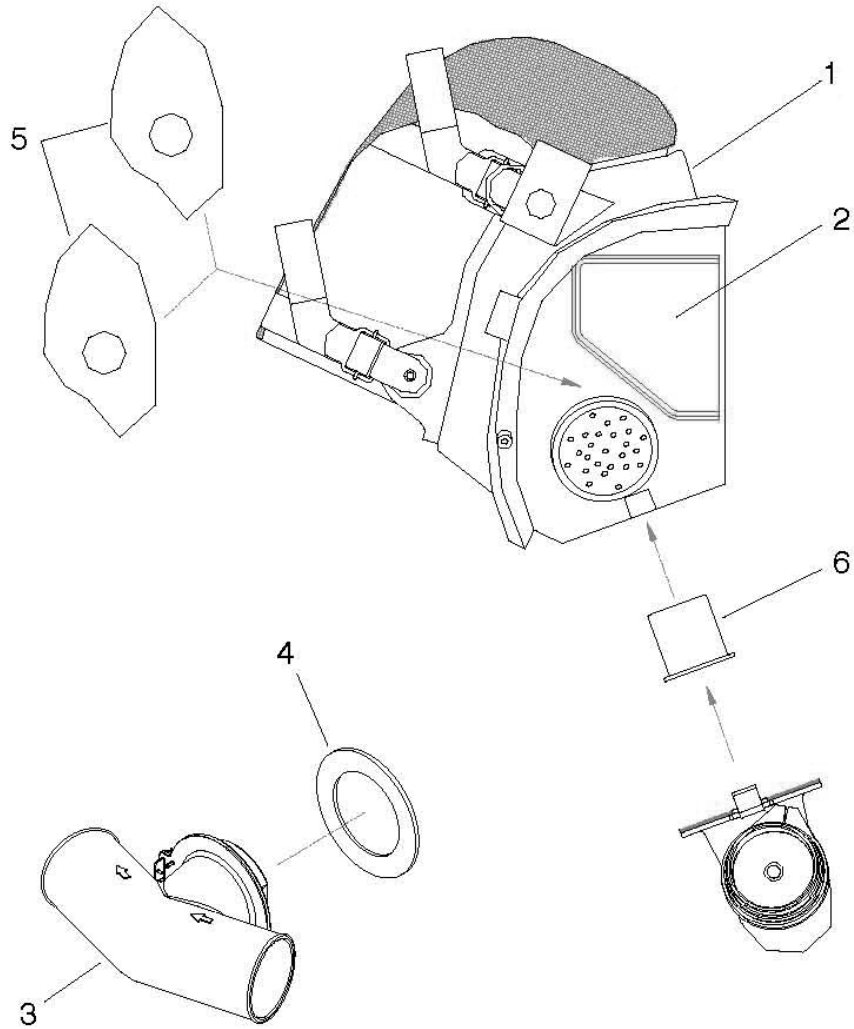
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Green Cylinder	4	Interior O-Ring
2	Exterior O-Ring	5	Valve Assembly
3	Valve Collar		

RMS Monitoring System



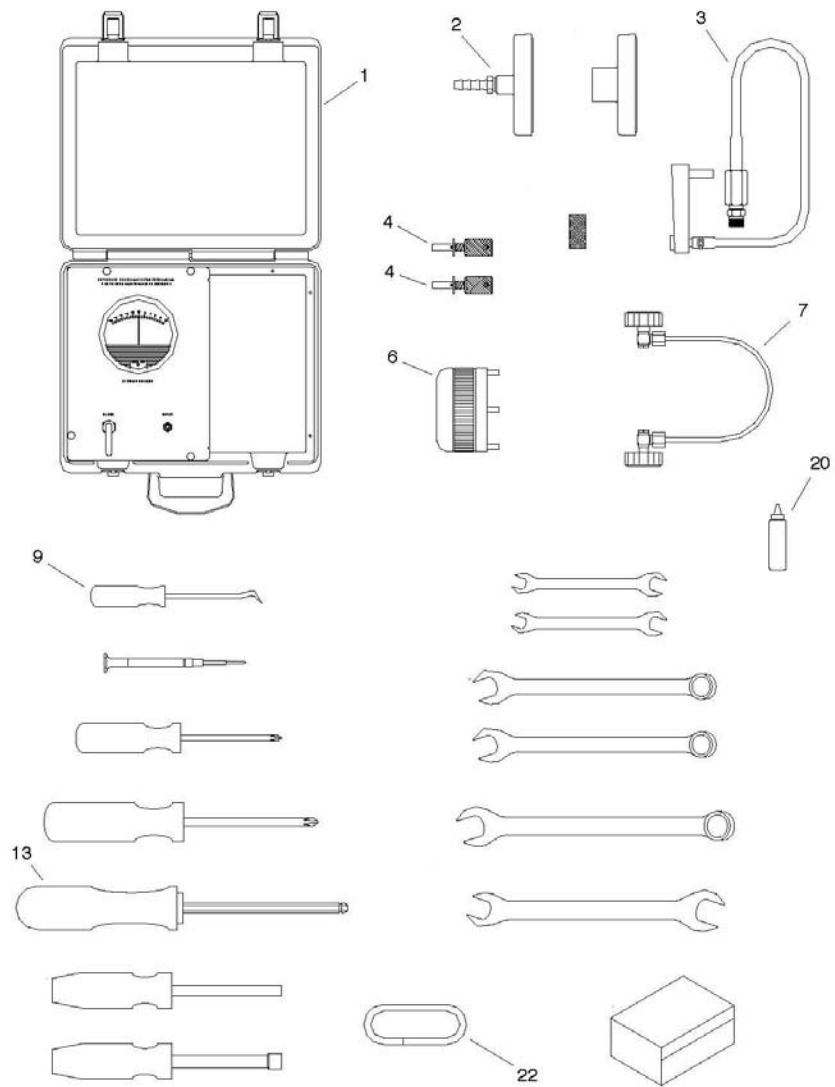
1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Battery Door	3	Battery Door Warning Label
2	Battery Door Gasket	5	9Vdc Battery

Facepiece Assembly



1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Facepiece Complete	4	Facepiece Adapter Gasket
2	Anti-Fog Lens Insert	5	Nose Cup Insert
3	Facepiece Adapter Assembly	6	Interface Tube

Tool Kit



1 Cons. No.	2 Designation	1 Cons. No.	2 Designation
1	Case Assembly	7	Center Section Pneumatic Plug
2	Leak Check Adapter Fitting	9	Combination Pick Tool
3	Flow Test Fixture	13	1/4 - Inch Hex Driver
4	Test Key	20	Leak Detection Fluid
6	Vent Valve Wrench	22	3/8 - Inch OD Rubber Tubing