

## Rules for the contest for breathing apparatus technician (PSS BG-4 Plus)

### 1. General rules

- 1.1. Each team is allowed to appoint one participant (technician) to compete in maintaining the breathing apparatus.
- 1.2. Registration will be made with the team registration.
- 1.3. Each participant shall be provided with a fully assembled breathing apparatus, a kit of tools, an isolation test kit and a Test-it 6100 for checks and maintenance, liquid for detection of leaks as well as all spare parts that are necessary to carry out the task. During execution of their tasks the participants are allowed to use exclusively the tools and measuring instruments provided by the organizer.
- 1.4. The winner shall be nominated on the basis of the total score granted for correct completion of the scheduled inspection and for detection of deficiencies. The scores will be a loss of 2 points for defects not detected. A defect that is detected and not corrected will result in a loss of 2 points. The deficiencies can also stem from incorrect assembling of the breathing apparatus. In the event of a tie, the Technician that completed the problem in the shortest amount of time will be declared the winner.
- 1.5. Should any unpredicted defects of the breathing apparatus arise during the contest, the referee shall advise the participants that such failures are out of the competition scope. The participant should turn back when the referee stops the time count. After the defect is remedied the time count shall be restarted and the participant will carry on his task. When defects are caused by the participant, the time is not stopped.
- 1.6. If the defect caused by the participant fault prevents from further inspection the participant shall be disqualified.
- 1.7. When any test instrument is damaged by the participant, the participant shall be disqualified.

### 2. Execution of the competition task

- 2.1. The scheduled inspection shall be carried out in accordance with the maintenance manual of the apparatus manufacturer.
- 2.2. The attached checklist must be completed with all defects and repairs listed.

- 2.3. Use of incorrect units, e.g. 'bar' instead of 'mbar' shall be considered as error and a loss of 1 point will be applied.
- 2.5. Failure to write down the detected defect on the inspection sheet shall be considered an omission in seeking for a defect or skipping the inspection item.
- 2.6. The task shall be considered as successfully performed when the breathing apparatus is completely assembled, checked and ready for use.
- 2.7. The participant is allowed to return to remedying defects that have not been eliminated beforehand provided that the assigned time limit is still sufficient.
- 2.9. The overall time limit assigned for completion of the task, i.e. to carry out all checks and remedy all defects and deficiencies shall be 30 minutes. After that time the breathing apparatus should be ready for use. In five minutes prior to expiring of the time limit the referee shall advise the participant that his time limit is just about to expire.
- 2.10. The time count is started by the referee upon the participant appears at the inspection workbench.
- 2.11. The Technician will be told to stop at the 30 minute mark, all defects or repairs not completed will result in a loss of the appropriate points.

### 3. Rules for referees

- 3.1. The organizer shall prepare workbenches to carry out the contest.
- 3.2. Workbenches shall be assigned to participant by drawing prior to commencement of the contest.
- 3.3. Equipment and instruments as well as defects of breathing apparatuses shall be the same on all workbenches for the specific breathing apparatus type.
- 3.4. Referees shall evaluate performance of participant on the current basis in line with the score card but are not allowed to meddle in execution of tasks by the participants.
- 3.5. Upon completion of the task the participant shall hand over his "Breathing apparatus inspection sheet" to the referee.
- 3.6. The decision of the Senior Referee is final and binding.



**DRAEGER BG-4 BREATHING APPARATUS**  
**Testing Procedures**

*Please note that all values and units are according to the BG 4 Canadian Unit*

STEP	TESTER SETTING	PROCEDURE HINTS
1. Visual Inspection		Check for good condition.
2. Insert O <sub>2</sub> Cylinder		Fully Charged.
3. Insert Canister		Factory Sealed or Reusable.
4. Facepiece and Hoses		Check for good condition.
5. Low pressure warning	Pos. Pres. Pumping	Watch pressure gauge, activation should sound at below 1.4 mbar.
6. Inhalation Valve	Pos. Pres. Pumping	Pinch exhalation hose – 10 mbar indicated.
7. Exhalation Valve	Neg. Pres. Pumping	Pinch inhalation hose – 10 mbar indicated.
8. Drain Valve	Pos. Pres. Pumping	Fit sealing cap over the relief valve as the bag is inflated. Drain valve must open between 10 and 25 mbar
9. Leak Test	Leak Test	Reduce Pressure to between 7 and 7.5 mbar Leakage of 1 mbar in 1 minute is permissible.
10. Relief Valve	Pos. Pres. Pumping	Pump until relief valve opens. Opening pressure, should lie between 2 & 5 mbar.



STEP	TESTER SETTING	PROCEDURE HINTS
11. High Pressure Leak	Leak Test	Open cylinder valve. Alarm sounds once. The close cylinder icon will appear (Close Cylinder). Alarm sounds once, green indicator flashes. The open cylinder icon will appear (Open Cylinder)
12. Constant Metering Valve	Positive. Pressure. Pumping	Fit sealing cap over the relieve valve. Inflate the breathing bag Constant metering dosage should lie between 1.5 and 1.9 L/min.
13. Minimum Valve	Negative. Pressure. Pumping	Pump slowly until minimum valve is opening. Allowing the springs to push the breathing bag onto the minimum valve is also permissible. Minimum Valve should open between 0.1 and 2.5 mbar.
14. Bypass Valve	Leak Test	Press red button. Breathing bag inflates.
15.	Low Pressure Warning	Close cylinder valve. Warning sounds at 55 bar.
16.	Battery Check	Ensure battery icon is full.



**BG4 FUNCTION TEST RECORD UNIT# \_\_\_\_\_**

	Results	Defects and Repairs
Function Test Date (month as Jan – Dec)		
First initial, last name of technician		
Visual Inspection (incl. belt & lanyard)		
O <sub>2</sub> Cylinder Hydrostatic Test		
Face Mask Inspection		
Low Pressure Warning		
Inhalation Valve		
Exhalation Valve		
Drain Valve		
Positive Pressure Leak Test		
Pressure Relief Valve Activation		
High Pressure Leak Test		
Constant Dosage Rate		
Minimum Valve Activation Pressure		
Bypass Valve		
Cylinder Pressure		
Low Pressure Alarm		
Battery Test		
Date battery to be replaced		
Date soda lime to be replaced (6 months)		





## Technician Summary Sheet

<b>TECHNICIAN:</b>	<b>DATE:</b>
<b>TEAM:</b>	

	<b>DEMERIT CHARGED;</b>
<b>GENERAL PROBLEM</b>	
<b>FUNCTION TESTS</b>	
<b>TIME</b>	
<b>TOTAL DEMERITS</b>	
<b>SIGNATURE OF JUDGE</b>	

<b>COMMENTS:</b>



