

## O2ptima BMCL Assembly Guide Checklist

Date \_\_\_\_\_ Dive Location \_\_\_\_\_ Dive Buddy \_\_\_\_\_

1. \_\_\_ Fill oxygen, diluent, and bailout cylinders if needed.
2. \_\_\_ Analyze gas: Oxygen \_\_\_\_\_% O<sub>2</sub>, Diluent \_\_\_\_\_% O<sub>2</sub> / \_\_\_\_\_% He,  
Bailout 1 \_\_\_\_\_% O<sub>2</sub> / \_\_\_\_\_% He, Bailout 2 \_\_\_\_\_% O<sub>2</sub> / \_\_\_\_\_% He
3. \_\_\_ Analyze CO: Oxygen \_\_\_\_\_ PPM, Diluent \_\_\_\_\_ PPM, Bailout 1 \_\_\_\_\_ PPM, Bailout 2 \_\_\_\_\_ PPM
4. \_\_\_ Turn on handset and check O<sub>2</sub> sensor display in ambient air. Record mV readings: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_  
Readings should be between 8 and 14 mV.
5. \_\_\_ Change to low setpoint to fire O<sub>2</sub> solenoid. Check voltage: Ext. \_\_\_\_\_ V (min 7.6V) Int. \_\_\_\_\_ V (min depends on type of battery used) Change setpoint back to .19.
6. \_\_\_ Check HUD O<sub>2</sub> sensor display in ambient air and ensure that the reading agrees with the handset.
7. \_\_\_ Mount oxygen and diluent cylinders, attach regulators, and route hoses.
8. \_\_\_ Steramine and rinse canister, lid, loop hoses, DSV, and counterlungs unless completed before storage.
9. \_\_\_ Inspect canister, head, and lid. Is scrubber: EAC \_\_\_\_\_ Sorb \_\_\_\_\_ (type: \_\_\_\_\_)  
New \_\_\_\_\_ Used \_\_\_\_\_ (\_\_\_\_\_ min)
10. \_\_\_ If using sorb, pack scrubber canister. If using EAC, inspect cartridge for damage, mark/note cartridge direction and install cartridge. Inspect bore plug and confirm that it is installed in correct orientation.
11. \_\_\_ Lube head O-rings and flat seal as necessary. Confirm O-ring is in place on premix tube and install head onto canister.
12. \_\_\_ Confirm water trap is installed in lid. Lube lid O-rings and flat seal as necessary. Install lid onto canister.
13. \_\_\_ Install assembled canister onto stand.
14. \_\_\_ Confirm solenoid oxygen supply hose is securely attached and electronics canisters are plugged in.
15. \_\_\_ Pressure test canister. If good, ensure hoses are routed correctly and install back cover. Install trim weights if needed.
16. \_\_\_ Install calibration caps, connect O<sub>2</sub> hose, turn on controller, and flush with oxygen until PPO<sub>2</sub> readings stabilize.
17. \_\_\_ Check and record mV readings while filled with O<sub>2</sub>. Minimum 40 mV. Check for stability.  
1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_
18. \_\_\_ Turn on HUD to check operation at 1.0 PPO<sub>2</sub>. Calibrate controller and/or HUD if required.
19. \_\_\_ Inspect loop, fittings, O-rings, and counterlungs. Lube as needed. Install counterlungs. Assemble counterlungs to head and lid.
20. \_\_\_ Inspect BOV and mouthpiece. Attach BOV to loop hoses, close BOV and confirm correct flow direction through loop.
21. \_\_\_ Connect loop to counterlungs. Double check all loop fittings for tightness. Route controller and HUD cables.
22. \_\_\_ Attach BC hose and manual add feeds to BOV.
23. \_\_\_ Perform negative pressure test for a minimum of 30 seconds.
24. \_\_\_ Perform positive pressure test for a minimum of 2 minutes.
25. \_\_\_ Turn on oxygen and diluent cylinders. Open counterlung exhaust valve. Check ADV, manual add valves, trim pillow inflator, BC inflator and exhaust valves/OPVs for proper operation.
26. \_\_\_ Record oxygen and diluent cylinder pressures: Oxygen \_\_\_\_\_ bar, Diluent \_\_\_\_\_ bar
27. \_\_\_ Turn off cylinders and perform a leak down check.
28. \_\_\_ Turn oxygen and diluent cylinders back on, change setpoint to 0.5, and perform a 5 minute pre-breath confirming correct solenoid operation.
29. \_\_\_ Confirm correct onboard & bailout gases are configured and selected in computers and that they are set to CCmode.
30. \_\_\_ Check bailout regulator hoses, mouthpieces, and hose fitting tightness. Install bailout regulators. Confirm IP as needed.