

# **OPTIMA<sup>2</sup>CM**

## **Assembly Checklist**





## O2ptima CMCL Assembly Guide Checklist

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

1. \_\_\_\_ If not completed before storage, Steramine and rinse canister, lid, loop hoses, DSV, and counterlungs and allow to dry.
2. \_\_\_\_ Fill oxygen and bailout/diluent cylinders if needed.
3. \_\_\_\_ Analyze gas for O2 and He content (CO analysis also recommended): Oxygen \_\_\_\_\_ % O2 ,  
Bailout 1 (Diluent) \_\_\_\_\_ % O2 / \_\_\_\_\_ % He , Bailout 2 \_\_\_\_\_ % O2 / \_\_\_\_\_ % He
4. \_\_\_\_ Turn on handset and check O2 sensor display in ambient air. Record mV readings: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_  
Readings should be between 10 and 14 mV (for Analytical Industries Inc. sensors).
5. \_\_\_\_ Change to low setpoint to fire O2 solenoid. Check voltage: Ext. \_\_\_\_\_ V (min 7.6V) Int. \_\_\_\_\_ V (min depends on  
type of battery used) Change setpoint back to .19.
6. \_\_\_\_ Turn on HUD. Check operation, ensure that all LEDs are functional, and confirm orientation.
7. \_\_\_\_ Inspect canister, head, and lid for damage or debris.
8. \_\_\_\_ Is scrubber: EAC \_\_\_\_\_ Sorb \_\_\_\_\_ (type: \_\_\_\_\_)  
New \_\_\_\_\_ Used \_\_\_\_\_ (\_\_\_\_\_ min)
9. \_\_\_\_ Pack scrubber canister. If using EAC, inspect cartridge for damage, mark/note cartridge direction and install cartridge.
10. \_\_\_\_ 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 calibration caps, connect O2 hose, turn on controller, and flush with oxygen until PP02 readings stabilize.
14. \_\_\_\_ Calibrate controller and HUD.
15. \_\_\_\_ Check and record mV readings while filled with O2: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_  
Readings should be between 50 and 62 mV (for Analytical Industries Inc. sensors). Check for stability.
16. \_\_\_\_ Install both water trap tubes into counterlungs. (The black machined tube is for the exhale side.)
17. \_\_\_\_ Set the assembled scrubber canister into place and install onto counterlungs.
18. \_\_\_\_ Inspect DSV, mushroom valves, mouthpiece, loop hoses, fittings, and O-rings.
19. \_\_\_\_ Connect DSV to loop hoses and perform stereo check to confirm flow direction.
20. \_\_\_\_ Connect loop hoses to counterlungs. Double check all loop fittings for tightness.
21. \_\_\_\_ Route controller and HUD cables. Plug into electronics canisters and stow excess in counterlung pockets.
22. \_\_\_\_ Attach solenoid oxygen supply hose to fitting on head. Attach manual add feed to Oxygen MAV. **Make sure that the  
inline shutoff is turned on** and locked open using the lock clip.
23. \_\_\_\_ Clip and tighten canister cover. Mount oxygen cylinder, attach regulator, and attach oxygen hose to "Y" block.
24. \_\_\_\_ Ensure ADV is turned off and perform negative pressure test for a minimum of 30 seconds.
25. \_\_\_\_ Ensure counterlung exhaust valve is closed and perform positive pressure test for a minimum of 2 minutes.
26. \_\_\_\_ Turn on oxygen and record oxygen cylinder pressure: \_\_\_\_\_ bar
27. \_\_\_\_ Turn off oxygen cylinder and perform a leak down check.
28. \_\_\_\_ Turn oxygen cylinder back on, open counterlung exhaust valve, 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.

**\*\*\*Always complete the Preflight Checklist prior to beginning the dive\*\*\***