Kirby Morgan®
Deep Sea Diving Helmets

All Models

A2.1.1
Water Test Procedure

Water testing is the preferred method to ensure the helmet is leak-free and should be performed after an A2.1 overhaul or at any time the helmet is being removed from long-term storage or is in question. A complete and correct water test must be done, first testing the helmet with one inlet source (main supply) and then the other (EGS) separately while one inlet is open to the surrounding water. Using the main supply connection without the EGS hose connected will show any leaks from the EGS valve body/stem or seat/stainless side block.

Date: _____

Helmet Model: _____

Helmet Serial Number: _____

Associated Equipment Serial #(s): _____

Technician *(print name)*: _____

1. Required Items

Items
1. Helmet Blanking Plate, P/N DL-BP, Available from Dive Lab Inc., or a suitable neck dam plug. The helmet neck seal is blanked off using a blanking plate or plugging the neck dam. Any container with a 5–5 ½" or 127–140 mm diameter should work for a medium/large neck dam. A container with an approximate 8" or 200mm length is recommended
2. Low-pressure air source (135-150 PSI) to connect to the applicable One-Way Valve fitting or one for the EGS connection.
3. Suitable container to completely submerge the Helmet with LP air attached.

1.1 NO Blanking Plate

If you're testing without using a blanking plate or testing the SL 17B, then the following alternate items may be used.

Items, if no Blanking Plate
1. Insert the plug into the neck dam.
2. Using masking tape, tape the neck dam to the plug to prevent leaking or movement. Cable ties may be lightly secured over the tape just below the top of the neck dam.

NOTE

If there's any doubt about the integrity of the neck dam/ring assembly or helmet bottom ring sealing surface, the test WILL have to be completed with the plugged neck dam/ring assembly. The neck ring assembly could be bent, causing a minor leak when the helmet goes positive. Although these are usually major leaks. Do not rely 100% on the blanking plate. If you suspect any issues or the helmet/neck ring is old, test it using both methods: Blanking plate and homemade Plug.

2. Helmet Water Test Main Supply

PERFORM THE FOLLOWING:

NOTE

If testing the KM Diamond ensure Control Valve on the Surface Bypass Valve is in the vertical position.

Procedures	Initials
1. Install blanking plate.	
2. Close the Defogger/Steady Flow & EGS valve and turn the regulator adjustment knob in (clockwise).	
3. Ensure the EGS whip is removed and the EGS inlet is not capped or blocked shut.	
4. Connect the regulated air source to the one-way valve and pressurize.	

Procedures	Initials
5. Cycle the Defogger/Steady Flow valve and EGS valve (if the main supply inlet is used close EGS valve, if the EGS inlet is used to supply gas to the helmet, leave it open), and **activate or pulse the regulator purge.**	
6. Submerge the helmet.	
7. Release gas into the helmet by opening the Defogger/Steady flow or regulator purge. Residual bubbles can be wiped away with a hand before observations.	
8. Keep the helmet submerged for approximately 3 minutes. Once the trapped air has escaped, look for bubbles and water entering the helmet. Bubbles can be wiped away with a hand before observations.	
9. Move the nose block device in and out.	
10. Lightly pulse the regulator purge 5x and allow it to settle.	
11. Crack the Defogger/Steady Flow Valve for 5 seconds and close  **NOTE** Some air leaks may only show when the helmet goes positive.	
12. Dial out the regulator adjustment knob counterclockwise until a slight free flow starts, then dial back in clockwise until it stops, then one more full turn. Dial in further to desensitize as needed.	
13. Tilt the helmet around while looking for leaks.	
14. Remove the helmet from the water.	
15. Open and close the EGS Valve to purge excess water from the EGS inlet.	

Procedures	Initials
16. Secure air, bleed down and disconnect.	

Recorded in service records for helmet and EGS System (maintenance log books)? ☐ Yes ☐ No

Recorded service in helmet maintenance log book? ☐ Yes ☐ No

I_____ hereby certify that I have performed the work required in the A2.1 and that **I AM** a certified KMDSI / Dive Lab technician.

Print Name: _____

Signature: _____ Date: _____

ID #: _____ Date of Certification: _____

I_____ hereby declare that I have performed the work required in the A2.1 and **I AM NOT** a certified KMDSI/Dive Lab technician.

Technician/Owner Print Name: _____

Signature: _____ Date: _____

Comments: _____

KMDSI strongly recommends that a certified KMDSI Repair Technician make all repairs and that only genuine KMDSI repair and replacement parts be used. Owners of KMDSI products that elect to do their own repairs and inspections should only do so if they possess the knowledge and experience. All inspections, maintenance, and repairs should be completed using the appropriate KMDSI user guide and Operations and Maintenance Manual(s). Persons performing repairs should retain all replacement component receipts for additional proof of maintenance history. Should any questions on procedures, components, or repairs arise, please contact Kirby Morgan Dive Systems, Inc., by telephone at (805) 928-7772 or via e-mail at kmdsi@kirbymorgan.com, or contact Dive Lab, Inc., by telephone at (850) 235-2715 or via e-mail at divelab@divelab.com.

The Maintenance Log, Appendix 3, found in the Misc. Appendices checklists on the Kirby Morgan website, may be used as a template to create blank pages to record all the maintenance performed.