

**KMB 18/28 (BANDMASK)  
OVERHAUL, MAINTENANCE, AND INSPECTION CHECKLIST  
APPENDIX A2.1**

7-12-06

**THIS INSPECTION AND MAINTENANCE SHOULD BE PERFORMED AT LEAST ANNUALLY AND AS DICTATED BY CONDITION REVEALED DURING DAILY/MONTHLY INSPECTION. MONTHLY INSPECTIONS DETERMINE NECESSITY FOR OVERHAUL WITH MORE ACCURACY THAN SIMPLY PLACING A NUMBER OF HOURS OF USE.**

**NOTE:** Masks being used in polluted waters, or extreme environments, will require more frequent inspection.

Date:
Mask Serial #:
Associated Equipment Serial #(s):
Technician (print name):

<b>PROCEDURES</b>	<b>INITIALS</b>
<b>HOOD ASSEMBLY</b>	
1. Remove the Earphones from their pockets in the Hood. Remove the Hood (2) from the Mask. Perform a visual inspection of all components. Guidance O & M Manual.	
2. Visually inspect all metal parts of the Band Assembly, including the Band Screws, for damage. Replace if necessary. Guidance O & M Manual.	
3. Visually inspect the Hood for signs of damage and/or deterioration. Guidance O & M Manual.	
4. Check the Head Harness (Spider) (1) for signs of tearing, deterioration, and/or damage. Ensure all five legs of the Spider are present. Guidance O & M Manual.	

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<b>PROCEDURES</b>	
<b>MASK ASSEMBLY</b>	
1. Visually inspect the Mask exterior and interior for loose and/or missing fasteners and obvious signs of damage; including cracks, gouges, and/or depressions.	
<b>NOTE:</b> On the KMB-18 any gouges in the fiberglass shell deeper than 1/16” should be repaired. Fiberglass and gel coat repairs <b>MUST</b> be completed by a technician that has received certification for Helmet Shell repairs by KMDSI or Dive Lab, Inc. Any cracks or depressions with fractures must be checked by an Authorized KMDSI Repair Facility.	
2. Remove the Covers from the Earphones. Remove Microphone from the Oral Nasal Mask. Inspect and repair/replace as necessary. Perform a communications check. Guidance O & M Manual	
<b>CAUTION:</b> The Nose Block device <b>MUST</b> be replaced when installing a new Oral Nasal Mask. Stretching the Oral Nasal Mask over the Nose Block Device can cause the Oral Nasal Mask to tear.	
3. Remove the Nose Clearing Device (34, 33, 3). Clean and inspect the Nose Clearing Pad and Shaft. Replace O-Rings (31,32(2)).	
4. Remove the Oral Nasal Mask (9) and Oral Nasal Valve as an assembly (4, 5). Replace the Valve and clean the Valve body. Clean and inspect Mask and Valve Assembly for damage. Guidance O & M Manual.	
5. Remove the Comfort Insert (14) [KMB-18 only]. Clean and inspect the Comfort Insert for damage and/or deterioration. Mark N/A for KMB28	
6. Remove the Demand Regulator from the Mask and set aside. Guidance O & M Manual.	
<b>NOTE:</b> Demand Regulator annual maintenance will be addressed in the Demand Regulator section of procedures.	
7. Remove, clean, and inspect the Whisker from the Regulator Body. Main Exhaust and the Whisker should be replaced during annual overhaul if the rubber shows any signs of deterioration, wear, and/or damage. Guidance O & M Manual.	
8. Perform a Port Insert test (Authorized Repair Technician only). Replace/repair as necessary. Replace View Port O-Ring.	

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<b>PROCEDURES</b>	
<b>NOTE:</b> Testing of the Port Inserts should be done <b>ONCE A YEAR</b> , or whenever Port Insert damage is present or suspected. (KMDSI P/N 525-115 Thread Insert Testing Block Kit) Guidance Basic Repair Technician Training Guide, Thread Insert Testing Procedure.	
9. Remove the Main Exhaust Valve Cover (65) and replace the Main Exhaust/Dewatering Valve (66). Inspect Seat for damage and/or contamination. Guidance O & M Manual.	
<b>SIDE BLOCK</b>	
<b>NOTE:</b> The Side Block does not need to be removed from the Mask every year, providing excessive internal corrosion is not present. However, KMDSI recommends that every <b>THREE (3) years</b> the Side Block Assembly be physically removed from the Mask per Section 6.5.2.1 for the KMB 18A, Section 6.5.2.2 for the KMB 18B and KMB-28, and reinstalled per Section O & M Manual.	
1. Remove, discard, and replace Umbilical Adapter with a new one.	
2. Remove, disassemble and overhaul the One-Way Valve. Guidance 5.5.3.	
3. Remove, disassemble, and overhaul the Auxiliary Valve (EGS), and Defogger Valve components. Guidance O & M Manual.	
<b>NOTE:</b> It is not required to remove the EGS Valve on the Side Block for the annual overhaul. However, if the Side Block is to be removed or the EGS Valve exhibits <b>excessive corrosion/verdigris</b> , the EGS Valve will require removal, cleaning, and re-sealing with Teflon™ tape.	
<b>DEMAND REGULATOR</b>	
<b>NOTE:</b> KMDSI recommends the following parts on the Demand Regulator be replaced on an annual basis regardless of amount of use: the Inlet Valve Seat (P/N 510-580) on the Inlet Valve (P/N 545-026), Nut (P/N 530-303), Inlet Nipple O-Ring (P/N 510-014), Exhaust Valve (P/N 510-552), Adjustment Shaft Washer (P/N 520-032), and O-Ring (P/N 510-011).	
1. Disassemble the Demand Regulator. Visually inspect the interior of the Regulator Body for corrosion and/or contamination. Clean as necessary. Guidance O & M Manual.	
2. After the Regulator has been disassembled and cleaned, re-inspect all parts. The Adjustment Nut (57) must never be reused. Reuse of the Adjustment Nut will not allow the Regulator to maintain proper adjustment. Guidance O & M Manual.	

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<b>PROCEDURES</b>	
3. Re-assemble the Demand Regulator O & M Manual.	
4. Ensure the Adjustment Shaft rotates smoothly and there is no binding.	
5. Install the Exhaust Whisker (35) onto the Exhaust Flange of the Regulator and attach the Whisker to each side of the View Port Retainer. Guidance O & M Manual.	
<b>NOTE:</b> KMDSI recommends replacement of the Hose Assembly (117a) on the KMB-18A every 2-years, regardless of condition.	
<b>NOTE:</b> If this maintenance is during an annual overhaul, replace the Teflon O-Ring (116b) at the Side Block end of the Bent Tube and the O-Ring (118b) at the Demand Regulator Inlet side of the Bent Tube.	
6. Mount the Regulator to the Mask. Guidance O&M Manual.	
7. Reinstall Oral Nasal Mask, Valve Assembly, and Nose Block Device. Guidance O & M Manual.	
8. Check the Regulator for proper operation and fine-tune the adjustment if necessary. Guidance O & M Manual.	

## **IMPORTANT NOTES ON REGULATOR ADJUSTMENT**

- If a new Inlet Valve or Soft Seat is installed, allow the Regulator to sit for 24 hours with the Adjustment Knob turned in all the way, before adjusting. This will allow the rubber in the Inlet Valve Stem to set against the Inlet Nipple. If the Regulator is to be used immediately, be aware that the Rubber Seat will take a set, changing the adjustment and the Regulators performance. This requires a readjustment of the Regulator after the first day of use.
- Normally, if the Regulator leaks breathing gas, the Regulator Adjustment Nut is too tight and must be loosened until the lever has 1/16<sup>th</sup> - 1/8<sup>th</sup> of an inch of freedom at the end.
- If the Regulator continues to leak after proper adjustment has been made, ensure a correct supply pressure of 135 - 150 psig (9.3 – 10.3 bar). Both the Inlet Valve Soft Seat and/or the Inlet Nipple must be inspected for damage. Generally, if the Inlet Nipple has missing chrome or a bent/damaged knife-edge it will damage the Soft Seat and will not make a proper seal. Best practice is to replace the Inlet Nipple and the Soft Seat.

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<b>PROCEDURES</b>	<b>INITIALS</b>
<b>EMERGENCY GAS SUPPLY (EGS)</b>	
<b>NOTE:</b> The Emergency Gas System consists of a good quality First Stage Regulator equipped with a submersible pressure gauge, an Over Pressure Bleed/Relief Valve, and an Emergency Gas Supply Hose that connects to the Emergency Valve on the Mask Side Block.	
1. Check the hydrostatic date and last visual inspection record (“VIP”) of the cylinder. Ensure date(s) are within the specified range. The VIP is done at least annually and the hydrostatic test is done at least every five years.	
2. Check the maintenance record of the EGS components to ensure the First Stage Regulator’s maintenance has been performed in accordance with the manufacturer’s recommendations.	
3. Check all Hoses for signs of blisters, cover slippage, cuts, and/or abrasions. Replace any Hose(s) that show signs of leakage/damage. If a Quick Connect EGS hose is being used, inspect quick connect and fittings for signs of wear/damage.	
4. If a submersible pressure gauge is used, ensure it has been compared to a gauge of known accuracy.	
5. Overhaul and test the First Stage Bleed/Relief Valve. Guidance as per “Appendix 4: Bleed/Relief Valve Cleaning, Inspection, and Overhaul Procedures”.	
6. Log the lifting pressure _____ psig.	
<b>NOTE:</b> An adjustable First Stage Regulator and a Gas Cylinder with a minimum of 500 psig (34.5 bar) available are required for this step.	
<b>NOTE:</b> The Bleed/Relief Valve should be adjusted to start relieving between 180 - 200 psig (12.4 – 13.8 bar) when tested.	
7. Check the over bottom setting of the First Stage to ensure it is within the manufacturer’s specified pressure range. For KMDSI Helmets and Masks, the minimum over bottom for the emergency supply is 135 psig and the maximum 165 psig (9.3-10.3bar). Log the intermediate pressure.	
8. Perform a leak check of all EGS components and fittings using soapy water in a pressurized condition. Repair/replace items as necessary.	

<b>PROCEDURES</b>	
9. Inspect the Harness Assembly for signs of wear and/or damage. Repair/replace as necessary. Document any inspection/maintenance on the Maintenance Log (Appendix 3).	

Technician Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

KMDSI **highly** 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 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 [info@kirbymorgan.com](mailto:info@kirbymorgan.com), or contact Dive Lab, Inc., by telephone at (850) 235-2715 or via e-mail at [divelab@aol.com](mailto:divelab@aol.com).

**NOTE:** The Maintenance Log, Appendix 3, may be used as a template for creating blank pages to record all the maintenance performed.