Kirby Morgan®
Deep Sea Diving Helmets

All Models (Except the SuperLite® 17B & KM Diamond)

A2.2
Monthly Inspection And Maintenance Checklist

THIS INSPECTION IS THE MINIMUM RECOMMENDED MAINTENANCE AND **SHOULD BE** PERFORMED AT LEAST **ONCE A MONTH** WITH HELMET(S) IN CONTINUOUS USE (USED FOR MORE THAN 20 DIVING DAYS IN A MONTH) OR AT LEAST EVERY **TWO (2) MONTHS**, WITH HELMET(S) USED LESS THAN 10 DIVING DAYS A MONTH.

This checklist is intended to aid persons performing routine maintenance and inspections of all KMDSI Helmets. This checklist should be used in conjunction with the applicable Operations and Maintenance Manual for the model helmet being serviced and is primarily intended to document the maintenance as it is completed and act as a guide. Specific detailed procedures for each section of this checklist can be found in the Operations and Maintenance Manuals. This checklist when completed should be retained in the equipment maintenance files. This checklist is generic in nature and is intended to be used for all models of KMDSI Diving Helmets.

KMDSI strongly recommends that all repairs be performed by trained personnel.

Helmets being used in extreme environments will require more frequent inspection.

This checklist should be used in conjunction with the most current Operations and Maintenance Manual. For latest Manual revisions please check the KMDSI web page at www.kirbymorgan.com.

During removal of components for inspection, O-rings and other consumable items may be reused, providing they are clean and a visual inspection does not reveal any damage or deterioration.

Perform the Neck Ring Assembly, Helmet, and Side Block/Demand Regulator inspection procedures with gas supplies not connected to the Side Block. Attach the gas supply at Step 5 on page 6 of the Side Block/Demand Regulator inspection procedure.

Date: _____

Helmet Model: _____

Helmet Serial Number: _____

Regulator Serial Number/Model _____ ☐ No Serial Number

Technician *(print name)*: _____

1. Neck Ring Assembly

DIVER/TENDER – CHECK THE FOLLOWING:

Procedures	Initials
1. Remove the Neck Ring Assembly from the Helmet. Remove and Inspect the O-ring for damage or deterioration, nicks and/or cuts. Clean and inspect the O-ring groove for damage. Lightly lubricate with recommended lubricant and reinstall. **GUIDANCE:** Neck Ring Assembly, Locking Collar and Front Stand Offs (NKDM)	
 NOTE All KMDSI Helmets require an internal Chin Strap Assembly inside the helmet.	
2. Inspect the Chin Strap inside the helmet and the attachment components for signs of wear or damage. **GUIDANCE:** Snap Tabs, Chin Strap, Swing Catch, Sealed Pull Pins for Stainless Steel Helmets (SSBTM) or Chin Strap, Sealed Pull Pins and Swing Catch for Fiberglass Helmets (BTM)	
3. Inspect the Neck Dam material for signs of wear or damage. Ensure the Neck Dam has no holes, tears, and/or damage. The Neck Dam should fit snug, but should never fit a diver tight enough to cause discomfort. Check to ensure it is free of deterioration. **GUIDANCE:** Neck Ring Assembly, Locking Collar and Front Stand Offs (NKDM)	
4. Visually inspect the locking collar for signs of damage. Check to ensure the neck pad can slide to allow for proper adjustment. Check for loose or missing fasteners. **GUIDANCE:** Neck Ring Assembly, Locking Collar and Front Stand Offs (NKDM)	
5. Check the two sealed Pull Pins for smooth operation. Visually inspect for signs of oil leakage. **GUIDANCE:** Snap Tabs, Chin Strap, Swing Catch, Sealed Pull Pins for Stainless Steel Helmets (SSBTM) or Chin Strap, Sealed Pull Pins and Swing Catch for Fiberglass Helmets (BTM)	

⚠ CAUTION

If Sealed Pull Pins do not operate smoothly, or if oil is leaking, from the Pull Pins, the Pull Pins should be serviced.

6. Visually inspect the metal Helmet Ring at the base of the Helmet for signs of damage to the sealing surface. Test fit the Neck Ring Assembly with the Locking Collar secured. Any damage requires further inspection by an Authorized KMDSI Technician.	
7. If helmet is equipped with Front Stand-offs, inspect for bends, twists, or any obvious damage.	
8. Check the Swing Tongue Catch for smooth operation. Check for obvious worn or damaged parts and components. **GUIDANCE:** Snap Tabs, Chin Strap, Swing Catch, Sealed Pull Pins for Stainless Steel Helmets (SSBTM) or Chin Strap, Sealed Pull Pins and Swing Catch for Fiberglass Helmets (BTM)	

2. Helmet Shell

DIVER/TENDER – CHECK THE FOLLOWING:

Procedures	Initials
1. Visually inspect Helmet Shell exterior for loose and/or missing fasteners and obvious signs of fiberglass damage; including cracks, gouges, and/or depressions.	
NOTE **Fiberglass Shells ONLY** Any gouges deeper than 1⁄16″ (1.5 mm) that shows bare fiberglass should be repaired. Fiberglass and gel coat repairs must be completed by a technician that has received certification for Helmet Shell repairs by KMDSI or Dive Lab, Inc.	
2. Remove and inspect Helmet Liner/Cushion for tears, broken snaps and/or neck strap damage. Lightly lubricate male snaps with silicone 111, Check the condition of the foam. Repair/replace as necessary. **GUIDANCE:** Head Cushion, Head Cushion Foam Spacer (HCFS) and Chin Cushion (HDCSH) or 17B Head Cushion (17BHC)	

Procedures	Initials
3. Remove the Earphones and Microphones from their holders. Remove the covers from the Earphones and inspect. Remove microphone from Oral Nasal Mask. Clean and repair/replace as necessary. Perform a communications check. Re-install hand tight only. **GUIDANCE:** Communications, Modular (excludes 17B, 17C, and KMB BandMasks®) (COM) or Communications on SuperLite® 17B and 17C Helmets, KMB 18 and 28 BandMasks® (17COM)	
4. Remove the Nose Clearing Device and Oral Nasal Mask. Remove the Oral Nasal Valve body as an assembly. Clean the oral nasal valve and Valve Body as an assembly. Clean the Oral Nasal Mask. Inspect Mask and Valve Assembly for damage and/or deterioration. Replace the Oral Nasal Mask if any damage is found. Replace the Oral Nasal Valve if it appears dried, stiff, or does not lay flat. Clean and inspect the Nose Clearing Pad, Shaft and O-rings for wear. Replace the Pad if deteriorated and/or damaged. Replace O-rings if any signs of wear or damage is present. Lightly lubricate the Shaft O-rings and the Shaft, then reinstall. Reinstall Oral Nasal Mask and Valve Assembly. **GUIDANCE:** Face Port, Port Retainer and Nose Block (FCPRT)	
5. Without air to the Helmet, check the operation of the Steady Flow Valve and Emergency Supply Valve. If the Valves do not operate smoothly they should be disassembled, cleaned, and lubricated. **GUIDANCE:** Stainless Steel Side Block (SSB) or Brass/Chromed Brass Side Block (SB)	
6. **Stainless Steel Helmets ONLY:** Remove the Exhaust Whiskers from the Main Exhaust Body and remove the Exhaust Valves from the main body. Ensure the Valve material is not hardened, distorted, and/or warped. Replace the Valve if questionable. Inspect dewatering valve, valve cage from inside helmet, Ensure the Valve material is not hardened, distorted, and/or warped. Replace the Valve if questionable. **GUIDANCE:** Quad Valve and Tri-Valve® Exhaust (QUAD)	
7. **Fiberglass Helmets ONLY:** Remove the Exhaust Whiskers from the Main Exhaust Body and remove the Exhaust Valves from the main body. Ensure the Valve material is not hardened, distorted, and/or warped. Replace the Valve if questionable. Remove the Main Exhaust Valve Cover (Water Purge Deflector for SL 27) and inspect the Main Exhaust/Dewatering Valve and seating surface for damage and/or contamination. Ensure the Valve material is not hardened, distorted, and/or warped. Replace the Valve if questionable. Reinstall the Cover. **GUIDANCE:** Quad Valve and Tri-Valve® Exhaust (QUAD)	

3. Side Block/Demand Regulator

Ensure gas supplies **ARE NOT** attached to the Helmet EGS and One Way Valve; remove protective dust caps, **DO NOT** open the Steady Flow/Defogging Valve.

DIVER/TENDER – CHECK THE FOLLOWING:

Procedures	Initials
1. Inspect and replace the bent tube if it is excessively scratched, dented, or compressed deeper than ⅛″ (3.18 mm). Check for erosion of the metal and severe corrosion. Replace if any erosion is present or integrity is in question. The bent tube is a critical component that routes breathing gas to the regulator system.	
2. Remove the EGS knob and inspect the exterior surfaces of the shaft and packing nut for obvious signs of corrosion and damage. Replace and repair as necessary. **GUIDANCE:** Stainless Steel Side Block (SSB) or Brass/Chromed Brass Side Block (SB) NOTE Visually inspect parts for corrosion. Look for discoloration, pitting and micro cracks. These conditions could result in a part failure. Corrosion pitting may have deep cavities that are not visible. If there's any doubt about the integrity of the part it should be replaced.	
3. Remove the Steady Flow Knob and inspect the exterior surfaces of the shaft and packing nut for obvious signs of corrosion and damage. Replace and repair as necessary. **GUIDANCE:** Stainless Steel Side Block (SSB) or Brass/Chromed Brass Side Block (SB) NOTE Visually inspect parts for corrosion. Look for discoloration, pitting and micro cracks. These conditions could result in a part failure. Corrosion pitting may have deep cavities that are not visible. If there's any doubt about the integrity of the part it should be replaced.	
4. Check the Umbilical Supply One-Way Valve for proper operation by sucking on the Umbilical Adapter with the Emergency Valve or steady flow valve open. No gas should be drawn through the One-Way Valve. **GUIDANCE:** One Way Valve (OWV)	

Procedures	Initials
5. Remove the Regulator Cover and Diaphragm. Visually inspect the interior of the Regulator Body for corrosion and/or contamination. Clean as necessary. **GUIDANCE:** 455 Balanced Regulator (455) or SuperFlow® 350 Regulator (SF350). As a general guideline dents in the regulator cover should not exceed ⅛"/3.2 mm. Additional guidance on when a SuperFlow®/SuperFlow® 350 regulator cover may need to be replaced: • Sharp dents may require cover replacement even if they do not exceed ⅛"/3.2 mm • Dents that deform the regulator cover slots. These slots are critical for proper regulator function. • Dents next to the purge button which prevent smooth operation of the button • Old regulator covers that appear rippled and thin from long term use. • If there's any doubt about the integrity of the cover it should be replaced.	
6. Carefully inspect the Diaphragm for cuts, tears, and/or deterioration. If any damage is found, replace the Diaphragm. Reinstall Diaphragm and Regulator Cover. **GUIDANCE:** 455 Balanced Regulator (455) or SuperFlow® 350 Regulator (SF350)	
7. Carefully check the Regulator Exhaust Valve for warping, distortion, stiffness, and/or damage. This is checked by pressing on the Exhaust Valve from inside the Regulator. Check the Regulator Body Valve Seat Spokes. The Spokes should be flat and even. Straighten if deformed. If the Valve shows signs of damage and/or deterioration, replace the Valve. **GUIDANCE:** 455 Balanced Regulator (455) or SuperFlow® 350 Regulator (SF350)	
8. Attach an air supply source to the Umbilical Adapter and set the supply pressure between 135–150 psig (10–11 bar). Turn the Regulator Adjustment Knob out, until a slight free flow develops, then adjust in until the free flow just stops and check the lever play. Depending on regulator model, there should be between 1⁄16"–¼" (1.5–3.2 mm) of play in the Lever. Adjust as necessary. **GUIDANCE:** 455 Balanced Regulator (455) or SuperFlow® 350 Regulator (SF350)	

Procedures	Initials
9. Install Diaphragm and regulator cover. Depress the purge button. With all regulators depressing the purge more than a ¼" (3.2 mm) should result in a strong flow of gas. If the regulator purge travel is less than or greater than amount specified, re-adjust the lever. **GUIDANCE:** 455 Balanced Regulator (455) or SuperFlow® 350 Regulator (SF350)	
10. Check the Steady Flow Valve for proper operation.	
 **NOTE** The Steady Flow Valve will rotate approximately 1 ¾ revolutions from closed to full open. With the air pressure to the Helmet between 135–150 psig (10–11 bar), turning the Steady Flow Valve ½ turn open should result in a strong flow of gas through the Defogger Train.	
11. Attach a regulated gas supply (normally the EGS system), adjusted to between 135–150 psig (10–11 bar), to the Emergency Valve on the Side Block. On the Side Block, open the Emergency Supply Valve all the way, and then slowly open the regulated gas supply. Check the function of the Regulator Purge, Regulator Adjustment Knob, and the Steady Flow Valve in accordance with previous steps 6 and 7. Check for gas exiting from the One-Way Valve. There should be no gas exiting the Umbilical Adapter.	
12. Turn off the gas supply, then bleed down and remove the umbilical from the Inlet Adapter.	
 **NOTE** The Emergency Gas System consists of a good quality First Stage Regulator equipped with, an Over-Pressure Bleed/Relief Valve, and an Emergency Gas Supply Hose that connects to the Emergency Valve on the Helmet Side Block.	

4. Emergency Gas Supply (EGS)

DIVER/TENDER – CHECK THE FOLLOWING:

Procedures	Initials
1. Check the hydrostatic date and the last visual inspection record ("VIP") of the cylinder. Ensure the date(s) are within the specified range. The VIP is done at least annually and the hydrostatic test is done at least every five (5) years.	
2. Check the maintenance record of the EGS components to ensure the First Stage Regulator maintenance has been performed in accordance with the manufacturer's recommendations.	
3. Check all of the Hoses for signs of blisters, cover slippage, cuts, and/or abrasions. Replace any Hose(s) that shows signs of leakage/damage. If a Quick Connect EGS Hose is being used, inspect the quick connect and fittings for signs of wear/damage.	
4. Check the Submersible Pressure Gauge, ensure it has been compared to a gauge of known accuracy and inspect the HP hose for signs of corrosion and damage. Replace the hose if any damage is found.	
5. Test the Bleed/Relief Valve and confirm relief is between 180–200 psig (12–14 bar) when tested. **GUIDANCE:** Bleed Relief Valve Appendix found on the Kirby Morgan website under Support > Checklists > Misc. Appendices	
6. Perform a leak check of all EGS components and fittings using soapy water in a pressurized condition. Repair/replace items as necessary.	
7. Inspect the Harness Assembly for signs of wear or damage. Repair/replace as necessary.	

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

I_____ hereby certify that I have performed the work required in the A2.2 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 A2.2 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.