Kirby Morgan®
Deep Sea Diving Helmets

SuperLite® 17B

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 Yoke/Neck Clamp 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 of the “Side Block/Demand Regulator” inspection procedure.

Date: _____

Helmet Serial Number: _____

Regulator Serial Number/Model _____ ☐ No Serial Number

Technician *(print name)*: _____

1. SL 17B Yoke/Neck Clamp Assembly

NOTE

KMDSI recommends that Neck Clamps older than five years old be removed from service and replaced. However, neck clamps that show no signs of damage and or deterioration can remain in service if the user/owner elects however, they should be inspected at least weekly I.A.W. Steps 1-6 of this procedure.

Procedures	Initials
1. Remove Safety Pin then remove Yoke / Neck Clamp Assembly from Helmet. Remove the neoprene Neck Dam completely and carefully inspect for tears, holes, and damaged areas and deterioration. This MUST be done to ALL types of SL 17B Neck Dams, PRE '84, Lock in dress, Cold Water and standard drawstring style. Replace the Neck Dam if any damage is present or if the material shows signs of deterioration. Visually inspect all metal parts of the Clamp Assembly for damage. Check the Hinge Pins for loose fit, signs of cracking, distortion, and/or any damage. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
2. Visually inspect all metal parts of the Clamp Assembly for damage. Check the Hinge Pins for loose fit, signs of cracking, distortion, and/or any damage. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
3. Visually inspect the Adjustment Stud on the Neck Clamp for signs of cracking, distortion, bending, stripped and/or damaged threads by loosening Nut all the way to the shoulder of the Stud, and manually squeezing the Neck Dam Clamp to expose the portion of the Stud that is normally hidden by the Stud Block. If any corrosion is present, clean and VERY carefully inspect for cracks or other damages. If any damage is present, the Neck Clamp requires replacement. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
4. Visually inspect the Rear Hinge Tab and Hinge for signs of cracking, bending, distortion, and/or loose fasteners. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	

Procedures	Initials
5. Check the Latch Catch Assembly for proper operation. Check for worn and/or damaged parts as well as loose and/or missing screws. Ensure the proper Safety Pin is present. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
 NOTE All KMDSI Helmets require an internal Chin Strap Assembly inside the helmet. The purpose of the chin strap is to act as a secondary restraint in the unlikely event of the helmet should become dislodged from the neck Clamp Yoke Assembly or Neck Ring Assembly.	
6. Test mate the Yoke/Neck Clamp to the Helmet. Check for proper Clamp adjustment and smooth operation. When properly adjusted, use a 7⁄16″ open-end wrench on Nut as a back-up wrench and a 7⁄16″ deep well socket with a torque wrench. Ensure Lock Nut is tightened using sound engineering practices. Repair/replace and/or adjust parts as necessary. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
7. Inspect the internal helmet chin strap assembly and the attachment components for signs of wear or damage. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
 NOTE All KMDSI Helmets require an internal Chin Strap Assembly inside the helmet.	
8. Inspect the Chin Strap inside the helmet and the attachment components for signs of wear or damage. **GUIDANCE:** Chin Strap, Sealed Pull Pins and Swing Catch for Fiberglass Helmets (BTM)	

Procedures	Initials
9. 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:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	

2. Helmet Shell

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)	
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)	

Procedures	Initials
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. Remove Helmet O-ring at the base of the Helmet. Wipe O-ring and O-ring groove with a clean cloth. Inspect the O-ring groove for damage. Inspect the O-ring for cracking, cuts, and/or signs of damage/deterioration and replace if necessary. Lightly lubricate the Neck Dam O-ring and reinstall on the Helmet. **GUIDANCE:** SuperLite® 17B Neck Clamp Area (Including Internal Chin Strap and Yoke) (17BNK)	
6. 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)	
7. 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. **GUIDANCE:** Quad Valve and Tri-Valve® Exhaust (QUAD)	

3. Side Block/Demand Regulator

NOTE

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

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 Flapper 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)

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.	

Procedures	Initials
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.