

Kirby Morgan®

Kirby Morgan Air Control System 5 (KMACS-5)

A2.1

Annual Inspection/Maintenance Checklist

THIS INSPECTION AND MAINTENANCE SHOULD BE PERFORMED **AT LEAST ANNUALLY** AND/OR AS DICTATED BY THE CONDITION REVEALED DURING NORMAL DAILY USE AND MONTHLY INSPECTIONS.

This checklist is intended to aid persons performing routine inspection/maintenance of the Kirby Morgan Air Control System 5 (KMACS-5). **The checklist should be used in conjunction with the latest version of the KMDSI Operations and Maintenance manual for the KMACS-5.** This checklist is primarily intended to document the condition and serviceability of the KMACS-5 system. The checklist when completed should be retained in the KMACS-5 maintenance files.

DANGER

Do not use 100% oxygen or enriched air nitrox supplied from the HP whips with the KMACS-5. Use only diver grade breathing air when using and testing the KMACS-5. The use of 100% oxygen or nitrox could cause a fire or explosion that could result in injury or death.

CAUTION

Always wear safety glasses when testing KMACS-5 components. Failure to do so may result in injuries to the eye.



NOTE

It will require more frequent inspection if the KMACS-5 is used around polluted waters or extreme environments.



NOTE

Check the Kirby Morgan website for the latest product improvement bulletins concerning the KMACS-5.



NOTE

Any box checked unsatisfactory should be explained in the remarks section.

General Cleaning

Cleaning components should be done per KMACS-5 Operations and Maintenance manual.

Lubrication

Components requiring lubrication should be done sparingly lubricated per KMACS-5 Operations and Maintenance manual.

Pressure/Leak Testing

Pressure and leak tests should be performed on all circuits, using diver air only. Removing the panel assembly from the box enclosure will be necessary to check components suspected of leaking. A small

spray bottle can apply a leak test solution to fittings. A leak test solution can be made by mixing a half teaspoon of handwashing dish detergent, such as Joy® or Palmolive®, with a quart of fresh water.

Date: _____

KMACS-5 Serial Number _____

Associated Equipment Serial #(s): _____

Technician (*print name*): _____

1. KMACS-5 Panel & Case

CHECK THE FOLLOWING:

Procedures		
1. Inspect the system's exterior for noticeable signs of damage and corrosion—document any discrepancies for remedy or repair in the remarks section.		
2. Inspect the hinges, securing latches, and handles for damage. Document any discrepancies and repair/replace as necessary.		
3. Ensure there is no pressure being supplied to the KMACS-5, the supply fittings are uncapped and the pneumofathometer (pneumo) valves are shut.		
4. Inspect the umbilical outlet fittings, pneumo outlet fittings, and LP air supply fittings for signs of wear, corrosion, and damage. Clean/replace as necessary. GUIDANCE: KMACS-5 Operations and Maintenance manual		
5. Remove the Yoke adapters from the DIN adapters, and inspect the two DIN/Yoke assemblies for signs of corrosion, wear, and damage. Visually inspect the O-rings and Clean or replace components as necessary. GUIDANCE: KMACS-5 Operations and Maintenance manual		

Procedures		
6. Inspect the DIN inlet filters for apparent signs of corrosion and foreign material. Replace filters if any corrosion or foreign material is present. Lightly lubricate the threads on the Yoke/DIN threads and reassemble.		
7. Inspect the high-pressure supply hoses for signs of cracking, bulges, and fitting slippage. Replace the hose(s) if any damage is found. In addition to hoses showing signs of wear or damage, KMDSI recommends replacing rubber H.P. hoses that are older than 10 years. GUIDANCE: KMACS-5 Operations and Maintenance manual		
8. Remove the pneumo supply valve stems, wipe clean with a clean lint-free cloth, visually inspect the tip of the soft seat for damage in the form of cracking and galling, lightly lubricate the stem threads, inspect the valve body internally and reassemble. GUIDANCE: KMACS-5 Operations and Maintenance manual		
9. With no pressure supplied to the system, operate the HP selector valve to check for smooth operation. GUIDANCE: KMACS-5 Operations and Maintenance manual  The HP selector valve is robust and should provide many years of service. The valve is a non-serviceable component and must be replaced if it does not operate properly. NOTE		
10. With no pressure on the system, test and operate the umbilical supply valves for smooth operation. Repair/rebuild as necessary. GUIDANCE: KMACS-5 Operations and Maintenance manual		
11. Perform a comparison of all KMACS-5 gauges with master gauges of known accuracy. Document the results on gauge comparison record sheets.  In place, gauge comparison is highly recommended over gauge removal for comparison. NOTE		

Procedures		
12. Lift test the relief valve. The relief should start lifting at a pressure between 270-290 psig. Document the lift pressure: _____ psig GUIDANCE: KMACS-5 Operations and Maintenance manual		
13. Check the function of the LP air check valve.  NOTE This can be done by removing the LP inlet cap and supplying at least 100 psi of pressure to the console through the HP hoses and KMACS-5 regulator. There should be no leakage at the LP inlet fitting.		
14. Bring up pressure to one of the HP supply systems and load the HP regulator to check for smooth adjustment and proper function. The minimum pressure that can be set is between 100-125 psig. The maximum attainable setting should be between 225-250 psig. Document the minimum and maximum settings that were possible. Minimum _____ psig Maximum _____ psig		
15. Perform a pressure/leak test of the HP circuits and hoses. Pressurize each HP circuit to between 3000-3500 psig and hold for a minimum of 5 minutes. Ensure zero leakage.  ORANGE circuit Start time _____ Start Pressure _____ Stop time _____ Stop Pressure _____  BLUE circuit Start time _____ Start Pressure _____ Stop time _____ Stop Pressure _____		

Procedures		
16. Perform a pressure/leak test of the low-pressure system using a test pressure between 225-250 psig. Hold pressure for a minimum of five minutes. Zero leakage allowed. Start time _____ Start Pressure _____ Stop time _____ Stop Pressure _____		
17. Perform a leak test of both pneumo circuits. Cap the pneumo outlet fittings then slowly pressurize each depth gauge to 200 fsw. Hold the pressure for a minimum of one minute. Zero leakage allowed. Start time _____ Start Pressure _____ Stop time _____ Stop Pressure _____		
18. Test the communications unit, charge the battery if necessary. GUIDANCE: KMACS-5 Operations and Maintenance manual		

Recorded service in KMACS-5 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.

**NOTE**

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.