

# Kirby Morgan® 77 Diver's Helmet Operations and Maintenance Manual

KMDSI Part #100-085

Patented, patents pending, foreign patents apply



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*Manual prepared by Marine Marketing and Consulting, Dive Lab, Inc., and KMDSI.*

*NOTE: This manual is the most current for the Kirby Morgan 77 Helmet. It is page dated April 2010.. Future changes will be shown on page III and the changed pages will carry the date of change. Previous manuals may not reflect these updates.*

## **WARNING**

**Diving with compressed breathing gas is a hazardous activity. Even if you do everything right there is always the danger that you may be killed or injured. No piece of diving equipment can prevent the possibility that you may be killed or injured any time you enter the water.**

**The Kirby Morgan 77 diving helmet meets or exceeds all performance and testing requirements of all government and non-government testing agencies throughout the world. It is CE approved.**

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## Warranty Information

Kirby Morgan Dive Systems, Inc. warrants every new mask, helmet, or KMAC Air Control System to be free from defects in workmanship for a period of three hundred sixty five (365) days from date of purchase. This warranty covers all metal, fiberglass, and plastic parts. This warranty does NOT cover rubber parts, communications components, or head cushions. In addition, due to the electrolytic nature of underwater cutting and welding, chrome plating cannot be warranted when the diver engages in these activities.

Should any part become defective, contact the nearest authorized KMDSI dealer. If there is no dealer in your area, contact KMDSI directly at (805) 928-7772. You must have a return authorization from KMDSI prior to the return of any item, Upon approval from KMDSI, return the defective part, freight prepaid, to the KMDSI plant. The part will be repaired or replaced at no charge as deemed necessary by KMDSI.

**This warranty becomes null and void if:**

- 1) The product is not registered with KMDSI within ten (10) days of purchase.**
- 2) The product has not been properly serviced and/or maintained according to the appropriate KMDSI manual. In addition, the user is responsible to ensure that all product updates as recommended by KMDSI have been performed.**
- 3) Unauthorized modifications have been made to the product.**
- 4) The product has been abused or subjected to conditions which are unusual or exceed the product's intended service.**

**NOTE:** Be sure to complete the enclosed warranty card and return it to KMDSI immediately. No warranty claims will be honored without a satisfactorily completed warranty card on file at KMDSI.

## Record Of Changes

It is the responsibility of the owner of this product to register their ownership with Kirby Morgan Dive Systems, Inc., by sending the warranty card provided. This card is to establish registration for any necessary warranty work and provides a means of communication that allows KMDSI to contact the user regarding this product. The user must notify KMDSI of any change of address by the user or sale of the product.

All changes or revisions to this manual must be recorded in this document to ensure that the manual is up to date. Quantities marked in parenthesis.

| Change Number | Date       | Description of Change   |
|---------------|------------|---|
| 1             | 06/26/2008 | <p>Added CE Certification text on page 23</p> <p>Rearranged chapter 5 into 2 columns, pages 63-64</p> <p>Added part number to KM-77 Tool Kit on page 68</p> <p>Rearranged chapter 3, 3.3-3.6.4 to accommodate Scotch-Brite® text on page 42, section 3.3</p> <p>Rearranged chapter 6, 6.2.3-6.3 to accommodate Scotch-Brite® text on page 70, section 6.3</p> <p>REX®-3™ changed to REX® on page 80</p>   |
| 2             | 09/30/2008 | <p>On page number III removed page number column.</p> <p>Renumbered chapter 6 pages and subsequent chapters in table of contents.</p> <p>Added CE Certification text and logos on pages 19, 21 and 22.</p> <p>Moved Tables from pages 23, 25-26 and 28 to Appendix and created Appendix 3.</p> <p>Rearranged and renumbered chapter 2 and subsequent chapters.</p> <p>Updated Images on pages 32-33.</p> <p>Updated Exploded view of REX® regulator on page 34.</p> <p>Updated Image on page 73.</p> <p>Rearranged and Updated Chapter 6, 6.6.1, 6.6.3, on page's 80-83.</p> <p>Rearranged and updated Chapter 7, 7.8.3, 7.10 on page's 106-110 and page's 115-118.</p> <p>Added Appendix A2 page 165.</p> <p>Added Appendix 3 page 167.</p>  |
| 3             | 10/29/2008 | <p>Page 18 Image, bottom helmet added D ring</p> <p>Page 28 Text, First paragraph corrected KM27 to read SL27</p> <p>Page 35 Exploded View, added D ring</p> <p>Page 41 Exploded View, added D ring; Section 3.4.1 Removed Warning block.</p> <p>Page 53 Image, added D ring</p> <p>Page 54 Images, added D ring</p> <p>Page 56 Image, added D ring</p> <p>Page 60, Section 6.12.3 added D ring drying feature</p> <p>Page 68 Text, Warning block added to section 6.3; Paragraph pertaining to waxing helmet under 6.3 added.</p> <p>Page 136 Exploded View, added D ring</p> <p>Page 141 Exploded View, added D ring</p> <p>Page 156 added diagram of Waterproof Connector</p> <p>Page 157 Image, updated waterproof connector image</p> <p>Page 163-164 Text, various torque specification changes</p> |

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|---|------------|--|
| 4 | 03/19/2009 | <p>Page 23 Section 2.6.2 Paragraph 2: SCFM changed to SLPM</p> <p>Page 82 Section 7.3.2: Picture caption changed from 270 kg.cm to 17 Newton Meters.</p> <p>Page 87 Section 7.4.4 Step 1 and 5: Lacquer Thinner changed to Acetone, changed 50 inch pounds to 35 and 5.65 Newton Meters to 4.</p> <p>Page 107 Section 7.9.1: A few words of caution made into a caution.</p> <p>Page 129 Section 8.4.3 Step 4, 5 and picture captions: changed 12 inch pounds to 15.</p> <p>Page 137 Section 8.6.2 Step 14, 16: and picture caption changed from 14 inch pounds to 10 and 16kg.cm to 1.1 Newton Meters.</p> <p>Page 138 Section 8.6.3 Step 7: Changed 14 inch pounds to 10 and 1.38 Newton Meters to 1.1.</p> <p>Page 139 Section 8.6.3 Step 9: Changed 14 inch pounds to 10 and 16kg.cm to 1.1 Newton Meters.</p> <p>Page 146-147 Section 8.12.2 Step 2 and 6: changed 35 inch pounds to 20 and 27 kg.cm to 2.25 Newton Meters.</p> |
| 5 | 11/06/2009 | Chapter 2 Addition of CE Conforming Criteria.  |
| 6 | 04/28/2010 | <p>Updated chapter 1. Separated chapters 4 and 5 and updated.</p> <p>Removed Loctite 262 from pages 51, 53, 79 and 149.</p> <p>Warranty information updated.</p> <p>Updated diagrams.</p>  |

 **WARNING**

**Diving with compressed breathing gas is a hazardous activity. Even if you do everything right there is always the potential for serious injury or death. No one piece of diving equipment can prevent the possibility that you may be injured or killed any time you enter the water. The information in this manual is intended for users of Kirby Morgan helmets and persons that maintain or service Kirby Morgan helmets.**

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## Definition of Signal Words Used in this Manual

For your protection, pay particular attention to items identified by signal words in this manual. These terms are identified as, CAUTION, WARNING AND DANGER. It is especially important for you to read and understand these sections.

### **DANGER**

**This word indicates an imminently hazardous situation, which if not avoided, could result in death or serious injury.**

### **WARNING**

**This word indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.**

### **CAUTION**

**This word indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

If English is not your native language and you have any difficulty understanding the language of any warnings as they appear in the manual, please have them translated.

### **WARNING**

**Este é um aviso importante. Queira mandá-lo traduzir.**

### **WARNING**

**Este es un aviso importante. Sirvase mandario traducir.**

### **WARNING**

**Quest è un avviso importante. Tradurlo.**

### **WARNING**

**Ceci est important. Veuillez traduire.**

### **WARNING**

**Diese Mitteilung ist wichtig. Bitte übersetzen lassen.**

If you have any questions concerning this manual or the operation of your helmet, contact KMDSI (805) 928-7772 or by Email at [kmdsi@kirbymorgan.com](mailto:kmdsi@kirbymorgan.com) or Dive Lab Inc. (850) 235-2715 or at [divelab@divelab.com](mailto:divelab@divelab.com)

**IMPORTANT:** A word about this manual. We have tried to make this manual as comprehensive and factual as possible. We reserve the right, however, to make changes at any time, without notice, in prices, colors, materials, equipment, specifications, models and availability. Since some information may have been updated since the time of printing, please contact your local KMDSI dealer if you have any questions. Periodically KMDSI Operations and Maintenance Manuals are reviewed. Any updates/changes will be posted on the KMDSI website and may be downloaded for insertion/correction.

**Important Safety Information:** This Kirby Morgan 77 diving helmet is intended for use by trained divers who have successfully completed a recognized training course in surface supplied diving

 **WARNING**

**Follow all the instructions in this manual carefully and heed all safety precautions. Improper use of this diving helmet could result in serious injury or death.**

 **WARNING**

**Kirby Morgan Dive Systems, Inc. (KMDSI) warns all divers who use Kirby Morgan diving helmets or masks to be sure to use only KMDSI original parts from a KMDSI authorized dealer. Although other parts, O-rings and fittings may appear to fit your Kirby Morgan diving helmet or mask, they may not be manufactured to the same standards maintained by KMDSI. The use of any parts other than KMDSI original parts may lead to equipment failure and accidents.**

 **WARNING**

**Diving in waters that are chemically, biologically, or radiologically contaminated is extremely hazardous. Although Kirby Morgan diving helmets may be adapted for use in some contaminated environments, special training, equipment, and procedures are necessary. Do not dive in a contaminated environment unless you have been thoroughly trained and equipped for this type of diving.**

Read this manual before using or maintaining the helmet, even if you have experience with other diving helmets. **If you have purchased the helmet new from a dealer, be sure to send in the warranty registration card so we may keep you informed of any safety notices that affect this product.** If you resell or loan this helmet to another diver, be sure this manual accompanies the helmet and that the person reads and understands the manual. In addition to the manual a log book should be used to log all repairs, maintenance and use.

 **WARNING**

**This helmet was completely checked and should be ready to dive as it was shipped from the factory. However, it is always the diver's responsibility to check all the components of the helmet prior to diving. Use Dive Lab checklist A2.3 found on the web at [www.dive-lab.com](http://www.dive-lab.com).**

 **WARNING**

**Diving is a life threatening occupation. Even if you do everything right you can still be killed or injured. None of the models of Kirby Morgan helmets or masks can prevent accidents, injuries or death due to improper training, poor-health, improper supervision, improper job requirements, improper maintenance or acts of God.**

This manual is supplied to the original purchaser of this helmet. If you have any questions about the use of the helmet or you need another copy of this manual, contact KMDSI or your nearest KMDSI dealer. It may also be downloaded free from the KMDSI website at [www.KirbyMorgan.com](http://www.KirbyMorgan.com).

If you have any questions regarding the use, maintenance, or operation of this helmet, contact KMDSI at (805) 928-7772, fax: (805) 928-0342, or e-mail: [info@kirbymorgan.com](mailto:info@kirbymorgan.com).

**! WARNING**

**KMDSI helmets and masks are intended for underwater use only and should only be used by qualified divers that have received proper training in the use of this type of equipment. KMDSI helmets and masks should not be used or worn without the appropriate life support systems, such as air or gas supplies and support personnel as described in this manual.**

**! WARNING**

**KMDSI helmets and masks should never be used for motor sport racing, aviation / space craft use, or for chemical warfare use. The helmet must never be used by persons in poor physical condition, by persons with previous head, neck, or back injuries which could be aggravated by its use. The helmet should not be used by persons under the influence of drugs or alcohol. Furthermore, infants, children, or persons under the age of 18 should never wear KMDSI helmets and masks. Failure to pay heed to the above could result in serious injury or death.**

**! WARNING**

**Do not use KMDSI masks or helmets in currents exceeding 3.0 knots. Use in currents greater than 3 knots may allow water to enter the exhaust valve, possibly causing regulator flooding. This could lead to drowning.**

**! WARNING**

**Surface-supplied diving can be a strenuous activity. The Kirby Morgan 77 weighs approximately 30 lbs. KMDSI recommends that persons with a previous neck or back injury seek professional medical approval prior to engaging in surface supplied diving operations using the Kirby Morgan 77. Use of the Kirby Morgan 77 with a pre-existing physical/ medical condition may result in death or serious injury.**

Components requiring lubrication, should only be lubricated with oxygen compatible lubricants such as Christo-Lube®, Fluorolube®, or Krytox®. Lubricants must be used sparingly and should not be mixed with other lubricants.

The information contained in this manual is intended to aid the user in optimizing the performance of this helmet. The application of some of this information will depend on the diving situation and the use of associated equipment. Many countries have specific laws and rules regarding commercial diving. It is important for the user to understand the rules, regulations, and philosophy imposed by the governing, regulating bodies whenever using commercial diving equipment.

Whenever KMDSI helmets or masks are used in European Countries, which have adopted the C.E. certification programs, they must only be used with C.E. certified components. Diving operations should only be conducted within

 **WARNING**

**Never use the helmet without first completing all pre-dive maintenance and set up procedures. Failure to complete all pre-dive checks could result in helmet failure due to problems with the incorrect set-up of the equipment. This could lead to serious personal injury or death.**

 **WARNING**

**Always read the Material Safety Data Sheet (MSDS) for any chemical - adhesive, cleaning agent, or lubricant - used on your Kirby Morgan helmet. Some of these chemicals may cause serious bodily injury or death if used improperly or without the proper personal protective equipment.**

the limits of the operational specifications, and in accordance with the rules and regulations established by the governing authority in the specific country or geographical location where the diving operations are being conducted. If you have any questions concerning this manual or the operation of your helmet, contact KMDSI (805) 928-7772 or at [KMDSI@KirbyMorgan.com](mailto:KMDSI@KirbyMorgan.com) or Dive Lab Inc. (850) 235-2715 or at [Divelab@aol.com](mailto:Divelab@aol.com)

 **WARNING**

**Some of the procedures shown in this manual are for illustration purposes only. When using chemicals or materials that require the use of hand or eye protection, always wear the appropriate personnel protective equipment. Failure to use personnel protective gear may result in serious personal injury.**