

KIRBY MORGAN®

Patented, patents pending, foreign patents apply



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⚠ WARNING

Diving with compressed breathing gas is a hazardous activity. Even if you do everything properly 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.

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General Information KMDSI Products

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Warranty Information

NOTE: Be sure to complete the enclosed warranty card and return it immediately, or you may register your purchase online at www.kirbymorgan.com—go to Support.

KMDSI warrants every new Mask, Helmet, Scuba Regulator, Manifold Block or Kirby Morgan Air Control System 5 (KMACS 5) (each, a Product) to be free from defects in workmanship for a period of three hundred sixty five (365) days from the date of purchase from a KMDSI authorized dealer. This warranty covers all metal and plastic parts, but does NOT cover rubber parts, communications components, or head and chin 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.

Any defect of the product in workmanship or material covered by this warranty discovered within three hundred sixty five (365) days from the date of purchase must be promptly communicated in writing to the nearest authorized KMDSI dealer or (if no such dealer in the buyer's country) contact KMDSI directly at (805) 928-7772. **No Product returns will be accepted by KMDSI without a returned merchandise authorization (RMA) number from KMDSI.** Upon receipt of the RMA from KMDSI, the buyer should return the defective Product or part, freight prepaid, to an authorized KMDSI dealer or the KMDSI plant, as directed by the RMA. KMDSI will repair or replace the Product at no charge, within a reasonable time, as it deems necessary.

This warranty is null and void if:

- 1) The Product is not registered with KMDSI within ten (10) days of purchase, or
- 2) The Product has not been properly serviced and/or maintained according to KMDSI factory recommended procedures described in the manual or Product updates have not been performed as recommended by KMDSI, or
- 3) Unauthorized attachments or modifications have been made to the Product, or
- 4) The Product has been used for purposes other than those for which it was designed, or otherwise has been abused, misused, or subjected to unusual conditions, or the Product's intended service has been exceeded.

EXCEPT AS SPECIFICALLY PROVIDED HEREIN, THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE PRODUCT COVERED BY THIS WARRANTY IS MARKETING AND SOLD BY KMDSI SOLELY FOR COMMERCIAL OR INDUSTRIAL USE AND IS NOT A CONSUMER PRODUCT INTENDED FOR PERSONAL, FAMILY, OR HOUSEHOLD USE.

In purchasing any Product subject to this warranty, the buyer agrees that its sole and exclusive remedy and KMDSI's entire obligation in contract, tort, or otherwise under this contract will be repair or replacement at KMDSI's option of the Product or any parts which KMDSI

determines during the applicable warranty period are defective in workmanship or material covered by this warranty. All exchanged parts are the property of KMDSI. The buyer's exclusive remedy and the KMDSI's entire liability in contract, tort, or otherwise is the payment by KMDSI of the buyer's actual damages up to but not to exceed the amount paid by the buyer for the Product.

In no event shall KMDSI be liable to the buyer for indirect, special, incidental or consequential damages (including, but not limited to, damages for lost profits, lost sales, loss of business opportunity, or for injury to persons or property arising out of the use of the Product). Any claim or action for breach of warranty must be commenced within one year following delivery of the Product to the buyer.

Buyer acknowledges that this warranty is the sole and exclusive warranty of the Product and that it supersedes any and all oral or written representations and undertakings between KMDSI, its dealers, and the buyer relating to the Products. This warranty allocates the risks of product failure between KMDSI and the buyer, which allocation is recognized by both parties and is reflected in the price of the goods. The buyer acknowledges that it has read this agreement, understands it, and is bound by its terms.

WARNING

Diving with compressed breathing gas is a hazardous activity. Even if you do everything in the proper manner 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.

Definition of Signal Words Used in this Manual

The original language of the Kirby Morgan Manuals is English. Translation into other languages will be provided upon request. KMDSI may charge a fee for these services.

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.

NOTICE

This word is used to address practices not related to personal injury.

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 mandarlo traducir.

WARNING

Questo 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 or Dive Lab Inc. (850) 235-2715 or at 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.

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 radioactively 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.divelab.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.

⚠ WARNING

KMDSI helmets and masks are intended for underwater use only and 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. Kirby Morgan diving helmets and masks are intended for use by trained divers who have successfully completed a recognized training course in surface supplied diving.

⚠ 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 helmets weigh 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 Kirby Morgan helmets. Use of Kirby Morgan helmets with a pre-existing physical/medical condition may result in death or serious injury.

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.

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: kmddsi@kirbymorgan.com.

If oxygen safety is a requirement, then 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.

⚠ 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 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 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 or Dive Lab Inc. (850) 235-2715 or at 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.

⚠ WARNING

All parts on Kirby Morgan helmets and masks must be adjusted to their proper torque specifications. See “Torque Specs” on page APNDX-19 for a complete listing of torque specifications for each part. Failure to adjust parts to the recommended specifications could lead to helmet failure and accidents. This could be fatal.

1.1 Introduction

The Kirby Morgan Corporation was started in 1965. The copper and brass “heavy gear” or “Standard Dress” helmets were the first helmets manufactured by the company. Over the years Kirby Morgan designed, manufactured and sold many different helmets and masks for commercial divers.

Staying active in commercial diving has contributed to the successful design innovations of KMDSI products. This may be the primary reason for the acceptance of our designs by professional divers.

Bev Morgan has designed more than 57 diving helmets and over 40 diving masks. All employees of KMDSI participate as part of the Kirby Morgan design team. It would not be possible for us to supply the commercial, military, scientific, and public service diving industries with our equipment, without the team of people that make up Kirby Morgan Dive Systems, Inc. (KMDSI)

We feel it is important for the reader to understand that we at KMDSI consider ourselves as only part of the process along the path in diving equipment design. We welcome all input from our customers. The thinking of many good divers, diving equipment engineers, diving medical specialists, diving organization administrators and their supporting personnel has contributed to the current state of the art of diving.

Within each piece of equipment we manufacture is some of the thinking of those who have come before us. To all those individuals who gave something of themselves for the men and women who work underwater, we express a thank you.



*Bev Morgan, Chairman of the Board
Kirby Morgan Dive Systems, Inc.*

We have a strong commitment to providing the best diving equipment and service possible. This thinking has been the policy of Kirby Morgan Dive Systems, Inc. and we will continue to take this approach to our work.

Our extensive dealer network makes it easy to obtain genuine Kirby Morgan replacement parts, as well as technical assistance worldwide.

KMDSI has always concentrated on designing and manufacturing diving equipment that allows most repairs, inspections, and all routine maintenance to be performed by the user. Most routine preventative and corrective maintenance can be accomplished by using this manual, the KMDSI Tool Kit (P/N 525-620 or 525-768) and common hand tools. Technician training is available through Dive Lab Inc., information can be obtained on line at www.divelab.com or by telephone at 850-235-2715.

1.2 Full-Face Masks and Manifolds



SUPERFLOW® 350

ALSO AVAILABLE

KMB 18B

CE approved and R marked



SUPERFLOW® 350

ALSO AVAILABLE

KMB 28

CE approved and R marked



The **KMB 18B Band Mask** frame is constructed of hand laid fiberglass. The head harness is a molded, strong tear resistant neoprene rubber.

The hood, which attaches to the mask frame with welded stainless steel bands, provides warmth for the divers head as well as pockets for the ear-phones. The communications connections can be either a male waterproof plug-in type or bare wire posts. Both this mask and the KMB 28 feature the new Tri-Valve™ Exhaust System.

The **KMB 28 Band Mask** is very similar to the KMB 18, with many parts on the KMB 18B being interchangeable with the KMB 28. The major difference between the 18 and 28 is the material of the mask frame. The KMB 18 has a fiberglass frame (yellow) while the KMB 28 frame is an extremely durable injection molded plastic (black).

Other differences include:

1) The main exhaust body of the KMB 28 is part of the frame itself and uses a #545-041 main exhaust cover

2) No comfort insert is required on the 28

3) The face ports for the 18 and the 28 differ slightly in size.

Both the 18 and 28 are CE approved.

**M-48 SuperMask®****M-48 MOD-1**

CE approved and R marked

The **M-48 SuperMask** and the **M-48 MOD-1** are innovative designs in full-face masks. They provide the diver with all the comfort of a full-face mask with the convenience of changeable second stage regulators as well as the ability to use a snorkel without having to remove the mask.

The masks are comprised of two major components, the mask frame and the interchangeable lower pod. The removable lower pod is a feature unique to the M-48 full-face masks. When diving, the pod is easily removed and replaced on the mask, providing the diver the capability to buddy-breathe, use an octopus or perform an “in water” gas switch.

With the pod sealed to the mask, the flexible, silicone pod cover allows the diver to quickly place the regulator mouthpiece into the mouth or dive with it free of the mouth for communications. With the mouthpiece in, the regulator may be used without the pod being sealed to the mask.

The masks may also be used surface supplied when used with the proper accessories. We are currently developing several different pod configurations for both open circuit and rebreather use. For further information, see the M-48 Frequently Asked Questions (FAQ) area on our web site at <https://www.kirbymorgan.com/products/full-face-masks/m-48-supermask>.

**KMACS-5**

w/ NO Communications

**KMACS-5**

w/Communications

R marked

The **Kirby Morgan Air Control System-5 (KMACS)** is a lightweight, portable control box for use in surface supplied air diving operations. The KMACS-5 controls the diver's air supply, communications and monitors the diver's depth. It allows two divers clear push-to-talk (two wire) or round robin (four wire) communications. The KMACS-5 is also available without communications.

The air supply can be either from a low-pressure compressor or high-pressure cylinders. The adjustable first stage regulator reduces the high-pressure air and supplies low pressure through the umbilical to the diver's breathing system.

High pressure yokes permit U.S. standard scuba cylinders or DIN equipped cylinders to be used. Low-pressure air supply fittings allow for a compressor to be used as the primary air source.


A complete pneumo system with dual reading gauges (both US Standard and Metric) is provided for each diver's air, as well as a shut-off/bleed system that uses two high-pressure feed lines which allows changing of used cylinders without interruption of the diving operation. Optional shut off valves allow the isolation of each diver's air supply.

The communicator is a multipurpose intercom-

munication system that provides reliable and clear communications between a topside operator (tender) and one or more surface-supported divers, recompression chambers, or other submersible systems.

1.3 Kirby Morgan Diving Helmets

All Kirby Morgan diving helmets and masks are manufactured by Kirby Morgan Dive Systems, Inc. (KMDSI). Each step of the manufacturing process is carefully controlled to assure the customer of a high quality, durable helmet that will function properly for many years.

There are eight models of Kirby Morgan diving helmets currently in production. They are the SuperLite® 17B, SuperLite® 17C, SuperLite® 27®, and Kirby Morgan models 37, 37SS, 77, 97 and KM Diamond. All are  marked.



SuperLite® 17B

 marked



The **SuperLite® 17 A/B** was first developed in 1975 and quickly set a new standard for diving helmet design. Many large and small commercial diving companies, military organizations, scientific divers, and public safety divers are successfully using this design around the world. The SL 17B is equipped with the small tube, SuperFlow® adjustable regulator.

The SL-17 A/B helmet system consists primarily of two major components: the neck dam/yoke assembly, and the helmet. To don the helmet, the diver first slips the angled neck dam with the attached yoke over his head. The helmet is lowered

onto the diver's head with the help of a tender, then the yoke hinge tab is hooked onto the alignment screw on the rear weight. The neck clamp is then slipped onto the helmet and locked. The locking system not only seals the neck dam to the helmet but also secures the front of the yoke, fastening the helmet to the diver's head.

The **SuperLite® 17 A/B** shares many common breathing system parts with all Kirby Morgan helmets and masks. The breathing system was man-tested to 1600 FSW by the University of Pennsylvania and approved by the U.S. Navy for surface-supplied diving to 190 FSW with air and 300 FSW with mixed gas. It surpasses all requirements of all governing agencies and it is approved for commercial diving through out the world.

Other features that are common to all Kirby Morgan helmets include:

- Face port
- Communications components
- Oral/nasal mask
- Nose block device
- Air train/defogger



SuperLite® 27®

 approved and  marked



SUPERFLOW® 350

ALSO AVAILABLE



The **SuperLite® 27®** Commercial Diver's Helmet represents what we at Kirby Morgan consider

to be a turning point in modern diving helmet design. It is shown with the exceptionally high performance 455 Balanced Regulator (stainless steel). With a smaller, low volume shell design, this helmet is often preferred by persons with smaller heads.

The chrome plated machined brass helmet bottom ring houses the sealed pull pins and provides protection for the bottom end of the helmet. Like all other helmets, the diver is provided with an internally adjustable chin strap. The strap, along with the adjustable neck pad on the locking collar, give the diver a comfortable and secure fit.

The quick-change communications module, available with either bare wire posts or a waterproof connector, allows for easy, efficient maintenance of the helmets communications.

The other regulator choice for the SL 27® is the SuperFlow® 350, large tube, adjustable demand regulator. The helmet is available in the umbilical over the shoulder, “B” configuration only. The SL 27 comes standard with the exceptionally dry Tri-Valve exhaust system.

The helmet comes with the large tube SuperFlow® 350 adjustable demand regulator which provides an easier breathing gas flow during peak work output. The quick change communications module is available with either bare wire posts or a waterproof connector. The KM 37 comes equipped with the extremely dry Quad-Valve exhaust system.

The bottom ring houses the sealed pull pins and provides protection for the bottom end of the helmet. The diver is also provided with an internally adjustable chin strap. This custom fit and balance seats the helmet comfortably for long periods of time even when working in the face down position.



Kirby Morgan® 37

CE approved and R marked



The **Kirby Morgan 37** Commercial Diver's Helmet has basically the same features of the SL 27. The helmet consists of two major assemblies: the helmet shell/bottom ring assembly and the neck dam/neck ring assembly.

The Advantages of the Stainless Steel Helmets Include

Extremely rugged shell and other components

No refinishing required if the surface is scratched or gouged

Elimination of separate threaded inserts for securing the port retainer to the helmet shell

No need to remove the handle to change out the view port, its O-ring, or the port retainer

One piece side block includes both the defogger valve and the Emergency Gas System valve

The bottom ring is an integral part of the stainless steel helmet shell (not a separate part as on fiberglass helmets)



Kirby Morgan® 77

CR[™] marked



Kirby Morgan® 37SS

CE approved and CR[™] marked



The **Kirby Morgan 77** represents the first of our stainless steel generation of helmets. The stainless steel helmets incorporate our most advanced features and innovations, as well as provide the alternative for the diver that prefers a metal helmet over fiberglass. The KM 77 features the REX regulator, one of the best work-of-breathing performance regulators when compared to ANY others (with the exception of the 455). The Kirby Morgan 77 Dive Helmet is fully commercially rated.

The **Kirby Morgan® 37SS**, like the KM 77 and KM 97, features an all stainless steel shell, a stainless sideblock, port retainer, handle, and other key components. The SuperFlow® 350 regulator is standard on this helmet.

The Kirby Morgan 37SS features a quick change communications module, available with either bare wire posts or a waterproof connector, and allows for easy, efficient maintenance of the helmet's communications. This same communications system is found in all our helmet models with the exception of the SL 17B and 17C.



Kirby Morgan® 97

CE approved and R marked



The Kirby Morgan® 97 features the 455 Balanced Regulator which is an all Stainless Steel regulator of a balanced design that offers far greater overall breathing performance than the non-balanced SuperFlow® and SuperFlow® 350 regulator. The 455 has virtually the same breathing performance as the REX® regulator, but is designed to be used with the SL 27®, 17C, KM 37 and KM 37SS helmets. The overall performance of this regulator is outstanding and sets a new performance standard for commercial diving helmets.

The Kirby Morgan 97 features a quick change communications module, available with either bare wire posts or a waterproof connector, and allows for easy, efficient maintenance of the helmet's communications. This same communications system is found in all our helmet models with the exception of the SL 17B and 17C.



Kirby Morgan Diamond®

R marked



The Kirby Morgan Diamond® is the next modular variation to the KMDSI stainless steel helmet product line. It can operate in either open circuit or surface vent mode where the exhaled gas is sent to the surface directly or to a diving bell and further to a reclaim system. To switch from these two diving modes is a simple process of turning control valves located on the helmet.

⚠ WARNING

Before attempting any diving in any type of contaminated water, a complete diving and topside course in hazardous materials emergencies should be completed. The divers and the topside team must be properly trained and have the proper safety equipment. All helmets and suits can leak water under certain conditions. Divers should use extreme caution when diving in contaminated waters.

Exposure to dangerous chemical or biological contaminants could occur, causing illness, injury or death.