STOP!
BEFORE GOING FURTHER-

This manual will refer to location numbers in specific drawings, or in the exploded view, which is in the back of this manual. These numbers are called "location" numbers. They are used to find the referred to parts in the drawings in this manual only. They are not the part number. Next to the exploded drawing is a list of the "location" numbers that match the Kirby Morgan part numbers along with the name of the part. Always check the part number when ordering to make sure it is correct. When ordering, always specify the helmet model number and serial number as well.

Chapter 1
General Information KMDSI Products

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 fifty-seven 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.

Each piece of gear we manufacture has in it some of the thinking of those who have gone before us. To all those people who gave something of themselves to the men and women who work underwater, we express a thank you.

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.

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

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 the user utilizing this manual, the KMDSI Tool Kit (P/N 525-620) 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

KMB® 18 A/B

CE *approved and* CR™ *marked*

The **KMB 18B BandMask®** 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 earphones. The communications connections can be either a male waterproof plug in type or bare wire posts. Both this mask and the KMB 28B feature the new Tri-Valve™ Exhaust System.

The **KMB 28B BandMask®** (not shown) is very similar to the KMB 18, with many parts on the KMB 18B being interchangeable with the KMB 28B. The major difference between the 18 and 28 is the material of the mask frame itself. The KMB 18 has a fiberglass frame (yellow) while the KMB 28B 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 KMB 18 and KMB 28 are CE approved.

The **EXO Full Face Mask** is designed for both surface supplied and scuba diving. By enclosing the divers eyes, nose and mouth, the EXO permits nearly normal speech when used in conjunction with most wireless, and all hard wire underwater communication systems.

The **EXO BR (BALANCED REGULATOR)** shown here is designed to meet or exceed recommended performance goals in both scuba and surface supplied modes and is CE approved. It meets and surpasses European standards for regulator performance.

EXO® BR

CE *approved and* CR™ *marked*

The Balanced Regulator helps reduce the work of breathing for the diver by balancing the intermediate air pressure against the valve sealing pressure inside the regulator. This enables the regulator to instantly adjust to changes in line pressure. The balanced regulator is adjustable for a wide range of intermediate pressures between 90 PSIG – 250 over ambient pressure (6.2 – 17 bar).

Both models have a modular communications design that permits rapid and simple maintenance. The optional Hard Shell provides surfaces for mounting lights, cameras etc.

SuperMask M-48
w/ Scuba Pod

CE *approved and* CR *marked*

The **SuperMask M-48** is an innovative new design in a full-face mask. It provides 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 mask is comprised of two major components, the mask frame and the interchangeable lower pod. The removable lower pod is a feature unique to the SuperMask full-face mask. When diving, the pod is easily removed and replaced on the mask, providing the diver the capability to buddy-breathe, snorkel, 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 mask 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 Frequently Asked Questions (FAQ) area on our web site at **www.KirbyMorgan.com/FullFaceMasks/M48.html.**

SuperMask M-48
w/ Rebreather pod

CR *marked*

KMACS-5
w/ No Communications

KMACS-5
w/ Communications

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 Communication Set is a multipurpose intercommunication 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, (MK-21- U.S. Navy version), SuperLite® 17C the SuperLite® 27, and Kirby Morgan models 37, 37SS, 47, 57, and 77. All are CR™ 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. This helmet is CE marked.

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 their 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®-17A/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.

SuperLite® 17A/B

CE *approved and* CR™ *marked*

Kirby Morgan® 37

CE *approved and* CR™ *marked*

Yoke and Latch Catch Assembly

Neck Pad and Sealed Pull Pins.

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

* Face port and retainer ring
* Communications components
* Oral/nasal mask
* Nose block device
* Air train defogger

The **Kirby Morgan® 37** Commercial Diver's Helmet represents what we at Kirby Morgan consider to be a turning point in modern diving helmet design. The helmet consists of two major assemblies: the helmet shell/helmet ring assembly and the neck dam/neck ring assembly.

The helmet comes with the large tube SuperFlow 350 adjustable demand regulator which provides an easier breathing gas flow during peak work output. A quick change communications module is available with either bare wire posts or a waterproof connector.

The helmet 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 support. This custom fit and balance seats the helmet comfortably for long periods of time even when working in the face down position.

The **SuperLite® 27®** Commercial Diver's Helmet has all the same features of the KM37 on a smaller, low volume shell design. This helmet is often preferred by persons with smaller heads.

The chrome plated machined brass helmet neck ring houses the sealed pull pins and provides protection for the bottom end of the helmet. Like the SL-17K, 37 and 17C, the diver is provided with an internally adjustable chin support. This support, along with the adjustable neck pad on the locking collar, gives the diver a comfortable, secure, custom 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 helmet also features the SuperFlow 350 large tube adjustable demand regulator. The helmet is available in the umbilical over the shoulder, "B" configuration only.

SuperLite® 27®

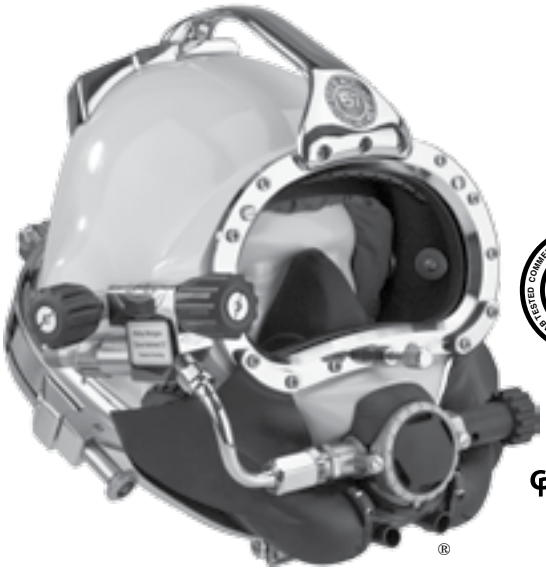
CE *approved and* CR™ *marked*

Kirby Morgan® 47

CE *approved and* CR™ *marked*

The **Kirby Morgan® 47** offers the ultimate in a high performance breathing regulator. This helmet has an entirely new breathing system, oral nasal mask, and water ejection system. The REX® Demand Valve, with it's fully adjustable balanced piston is a breakthrough design that exceeds the requirements of all government or other testing agencies.

It has the best work-of-breathing performance when compared to ANY other commercial diving helmet. The Kirby Morgan 47 Dive Helmet has been tested and meets or exceeds European CE requirements and is fully commercially rated. In all other respects, this helmet is nearly identical to the Kirby Morgan 37.



marked

The **Kirby Morgan® 57** helmet features our revolutionary new SuperFlow 450 Stainless Balanced Regulator. It's machined from a stainless steel casting for the ultimate in performance and reliability.

Like all KMDSI regulators on our helmets and Band Masks®, we use only regulators that are specifically designed for surface-supplied diving, that will perform over the wide range of pressures delivered by low pressure compressors. An ordinary SCUBA regulator mounted on a diving helmet is not capable of delivering the gas you need at heavy work loads. This commercially rated fully diver adjustable regulator delivers all the breathing gas you might require for the most demanding work underwater.

The **Kirby Morgan® 57** also includes our Quad-Valve™ Exhaust System. It's recommended for diving in biologically contaminated water, when you're properly trained and equipped, using recommended procedures. This new exhaust has exceptionally low exhalation resistance that you must experience to appreciate.

⚠ 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.

approved and marked

The **Kirby Morgan® 77** represents the first in a new generation of stainless steel diving helmets that provide an alternative for the diver who prefers a metal helmet. The helmet features our new stainless steel REX® regulator, which offers the best performance of any other Kirby Morgan system.

It has the best work-of-breathing performance when compared to ANY other commercial diving helmet. The Kirby Morgan 77 Dive Helmet has been tested and meets or exceeds European CE requirements and is fully commercially rated.

The advantages of this all stainless steel helmet include the following:

• No refinishing required if the surface is scratched or gouged.

• Faster production of helmets for customer delivery.

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

• No need to remove the handle to remove the port retainer.

• One piece sideblock includes both the free-flow valve and the Emergency Gas System valve.

• The helmet ring is an integral part of the helmet.

CE approved and GR™ marked

The **Kirby Morgan® 37SS** features an all stainless steel shell, as well as a stainless sideblock, helmet ring, bent tube, handle, and other key components. The SuperFlow 350 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.

The advantages of this stainless steel helmet include the following:

• Rugged helmet shell and other components

• No refinishing required if the surface is scratched or gouged

• Elimination of threaded inserts for securing port retainer to helmet shell