

## SECTION ONE: GENERAL INFORMATION

### General Information:

The Extreme Lightweight Diving System (XLDS) is a combination of assemblies and components designed and engineered as a complete surface supplied diving system allowing for rapid set-up and deployment. The System was designed and engineered by Dive Lab, Inc., primarily for Military and Paramilitary use, and is intended to meet specific performance goals and engineering requirements. The XLDS is available in two models, the XLDS-RDC-2 (two (2) diver) and XLDS-RDC-3 (three (3) diver). Both the two and three diver Systems consist of four major sub assemblies that work as a complete diver supply system primarily intended and designed for use with Kirby Morgan Helmets and Full Face Masks, but will also work with other demand mode equipment as outlined in the User Guide.

### Definitions :

RDC-2: Rapid deployment, 2 diver control console.

RDC-3: Rapid deployment, 3 diver control console.

XLDS: Extreme lightweight diving system

ICS: Intermediate compensating system

SCUBA: Self contained underwater breathing apparatus.

UMBILICAL: The air, communications/strength member and Pneumofathometer hose, that supports the diver.

HIGH PRESSURE: Pressure supplying the reducing regulators usually above 400 PSIG

LOW PRESSURE: The air being supplied to the reduced pressure circuit, normally 325-375 PSIG for the intermediate system, and up to 250 PSIG

for conventional surface supplied diving using 3/8" Umbilicals.

PNEUMO QD: Pneumofathometer quick connect

OB: Over bottom

PSIG: Pounds per square inch gauge pressure

PSIG OB: Pounds per square inch over the bottom pressure

RMV: Respiratory minute volume

WOB: Work of breathing

EGS: Emergency gas system

LPM: Litres per minute

FSW: Feet salt water

RMV: Respiratory minute volume

BPM: Breaths per minute

### Advantages:

- Lightweight and portable.
- Rapid set-up and deployment.
- Ease of operation
- HP and LP cross connect capabilities for added redundancy and safety.
- Low maintenance.
- Durable / Reliable.
- Certified performance capabilities.
- Modular System, allows the use of various high-pressure supply sources.
- Performance based on a minimum HP supply pressure of 400 PSIG.

Performance of the XLDS system is certified by Dive Lab Inc. The XLDS user guide lists the helmets and full-face masks and diver worn systems that may be

used with the XLDS and the specifications and limitations of use. For conventional surface supplied air diving, both the 2 and 3 diver RDC and HP supply may be used with many conventional helmets and full face masks providing the maximum flow and pressure requirements are met.

**The User Guide:**

This User Guide explains in detail, system start up, operation and shut down procedures, as well as basic care, maintenance, and troubleshooting. The guide defines the necessary support equipment requirements and performance specifications. The designation XLDS denotes the use of the two or three diver systems, (RDC-2) or three diver air control console, (RDC-3) and ultra-lightweight ¼" I.D. umbilicals, and man worn intermediate compensating system (ICS).

Whenever the XLDS is referred to in this user guide, it refers to the entire system.

Both the 2 and 3 diver RDC units can also be used for conventional Surface supplied diving using standard 3/8" (9mm) I.D. umbilicals.