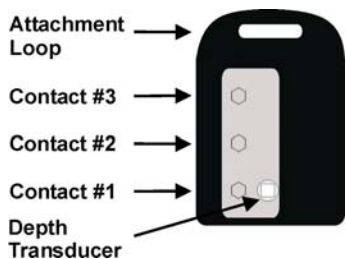


PRODUCT INTRODUCTION: The DDR-450 is quite simple to use and operate, but underneath that simplicity lays a significant level of sophistication. To get the safest and most effective use of this instrument, it is important that the user fully understand the product. Please read and understand this entire manual before using this device

This Manual is divided into the following Sections:

- Operation
- Configurable Items
- Specifications and Maintenance
- Liability, and Warranty

TOUCH CONTACTS:



The Contacts allow the user to command the unit to do a number of functions, communicate with a PC for extracting information or configuring the unit. When the contacts are bridged or shorted, the DDR-450 can detect the difference between wet fingers, water and the PC interface probe.

TURNING ON THE DDR-450: The DDR-450 automatically turns on when it is submerged in water. The unit may be manually powered up by simultaneously touching Contacts 1 and 2 for two seconds with wetted fingers. Once activated, the unit will remain on for 10 minutes. If a dive is not initiated within 10 minutes, the DDR-450 automatically shuts off.

If the battery voltage is less than 2.5 volts, the DDR-450 will not operate or communicate with the ANALYST[®] Personal Computer Interface.

TURNING OFF THE DDR-450: Following a dive, the DDR-450 will remain on for 10 minutes before automatically turning off.

DIVE MODE: The DDR-450 automatically enters the Dive Mode whenever the unit determines that it is in water deeper than five feet and exits the Dive Mode when the depth is shallower than three feet.

DATA STORAGE TYPES & CAPACITY: The DDR-450 has the following internal distinct data storage activities that can be recalled, viewed, and stored with the Analyst[®] PC interface:

- **Current Variable Information:** Local Time, Altitude, Battery voltage, Current unit Temperature.
- **Current Configuration Data:** As can be seen in "USER CONFIGURABLE ITEMS", below.
- **Historical Totals Summaries:** Dive Time, Number of Dives, Maximum Depth, Maximum Depth Dive Number.
- **Each Dive Beginning Statistics:** Local Time Clock, Dive of Day, Dive Number, Altitude, and Battery Voltage. Capacity is up to the most recent 256 dives.
- **Each Dive Ending Statistics:** Bottom Time, Max Depth, Temperature, Min Battery Voltage, Capacity is the most recent 256 dives.
- **Each Dive Configuration Data:** Configuration of the system, Capacity is the most recent 256 dives.
- **Profile Graphical Information:** Depth Graph, Ascent Rate Graph, and Temperature Graph. Capacity is a maximum of 480 hours at one second sampling depending on configuration.
- **Inter-Dive Events:** Number of Initializations, Unit Activation, Altitude Changes of 500 Feet, Temperature changes of 10 degrees, Sensor Malfunction, Analyst[®] interface with the DDR-450.

INTER-DIVE EVENTS: The DDR-450 stores important information between dives, even when the unit is not turned on. The information is stored as acquired and is called an "Inter-Dive Event". Some Inter-Dive events are:

- Initialization of the unit.
- The unit is turned on
- Low batteries
- Altitude Changes of over 500 feet
- Temperature Changes of 10 degrees
- Sensor Malfunction
- Analyst[®] P.C. Communication

USER CONFIGURABLE ITEMS: By using the optional Analyst[®] Personal Computer Interface, the user has the ability to change the following items:

Local Time/Date Stamp: This is the internal clock setting that is used by the system to time-stamp each individual dive as it occurs. Due to changes in battery voltage and temperature, the internal Time-of-day clock may slowly drift from the ideal. It is recommended that this clock be periodically set to your local time via the Analyst[®].

Erase All Dives: This allows the user to Erase All Dive Profile and statistical data stored in the unit and reset the dive counter. Care should be exercised when using this feature; once the data is erased it is non recoverable.

Post Dive Interval Period (1 to 30): This allows the user to select the duration of the Post Dive Interval period from a minimum of 1 minute to a maximum of 30 minutes in one-minute increments. As shipped from the factory, this is set to 2.

Confined Water Protocol (Training Mode) - (Enabled or Disabled): This option enables the Training Mode for the DDR-450. In this mode the DDR-450 will enter the Dive Mode at 2 feet instead of 5 feet and exit the Dive Mode at 1 foot instead of 3 feet. The Training Mode also permits the selection of an increased Post Dive Interval period from 10 to 30 minutes in one-minute increments. These changes permit the Instructor to record a complete training session, including in-water surface periods, as a single dive. As shipped from the factory, this is set to 'Disabled'. **This option can only be 'Enabled' via the Professional Edition of the Analyst[®].**

Training Mode Post Dive Interval Period (10 to 30): If the Training Mode is enabled this allows the user to select the duration of the Post Dive Interval period from a minimum of 10 minutes to a maximum of 30 minutes in one-minute increments. As shipped from the factory, this is set to 10. **This option can only be set via the Professional Edition of the Analyst[®].**

Battery: The DDR-450 is powered by a extremely powerful lithium battery that is designed to last a minimum of 10 years. This battery is not a replaceable or repairable item.

SPECIFICATIONS:

Activation	Manual and Water
Maximum Depth	Over 1476 feet
Depth Accuracy	+/-1% of full scale (+/- 14.76 feet)
Maximum Altitude	Space
Altitude Accuracy	+/- 1000 feet (+/- 12mb)
Temperature Range	10 to 150 degrees F, 1 degree increments
Temperature Accuracy	+/- 0.7% of full scale (+/- 1degree)
Dive Summary Storage	up to 256 Dives
Dive Profile Storage	up to 480 Dive hours depending on configuration
Profile Sampling	1 second
Typical Battery Life	Over 2000 dive hours under normal diving conditions or 10 years (whichever is first)

ASSISTANCE, REPAIR & MAINTENANCE: The Cochran DDR-450 does not require an Annual Maintenance, but if you suspect that your DDR-450 is not operating correctly, please contact our Customer Support Department in the USA for assistance at 972.644.6284 or FAX details to 972.644.6286 or E-mail details to service@divecochran.com. Most problems can be resolved without returning the unit. The unit may also be returned to the place of purchase and request the dealer to contact us. If this is not possible or is inconvenient due to a change in location, contact us for the name of the nearest Authorized Cochran Dealer.

- **NEVER TEST OR SUBJECT THE PRODUCT TO PRESSURIZED AIR! (VOIDS WARRANTY)**
- **DO NOT INSERT ANY OBJECTS IN THE DEPTH TRANSDUCER OPENING**
- **ONLY USE FRESH WATER TO CLEAN UNIT! NEVER USE SOLVENTS!**

ANALYST[®] Personal Computer Interface

The ANALYST[®] Personal Computer Interface is a complete hardware/software system that uploads data from the Cochran DDR-450 to an IBM or compatible Personal Computer with a Windows[®] 95/98/NT/ME/2000 & XP operating system. The ANALYST[®] Personal Computer Interface allows the diver to retrieve dive data, to enter and store Owner, User information in the unit and to enter and store information for each dive in a logbook database.

FCC LABEL

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INTERFERENCE STATEMENT: This equipment has been tested and found to comply with the limits for a Class B digital device. If not installed and used in accordance with the instructions, it may cause interference to radio communications. The limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the affected radio or television.
- Increase the separation between the equipment and the affected receiver.
- Connect equipment and the affected receiver to power outlets on separate circuits.
- Consult the dealer or an experienced radio/TV technician for help.

MODIFICATIONS: Changes or modifications not expressly approved by Cochran Consulting, Inc. could void the user's authority to operate the equipment.

SHIELDED CABLES: This product is designed to be used only with the Analyst[®] interface cable (RS-232) to maintain compliance with FCC Regulations.

PATENT INFORMATION: Protected under one or more Foreign or US patents.
5,899,204 5,794,616 5,617,848 5,570,688
Other patents may be pending.

Analyst® is a registered trademark of Cochran Consulting, Inc. Copyright 2005 Cochran Consulting, Inc.

CE: The CE mark is used to mark conformity with the European Union EMC directive 89/336/EEC. Cochran dive instruments fulfill all the required EU directives.

PREN 13319: PREN 13319 "Diving accessories – Depth gauges and combined depth and time measuring devices – Functional and safety requirements test methods" is a European diving depth gauge standard draft. Cochran dive instruments are designed and tested to comply with this standard draft.

LIMITED WARRANTY: To the original purchaser ("OWNER") only, Cochran Undersea Technology, a division of Cochran Consulting, Inc. ("COCHRAN"), represents this Product to be free of defects in materials and workmanship under normal use for 12 months from the date of shipment from COCHRAN to the Authorized Dealer or Distributor. For purposes of establishing warranty eligibility, this date of shipment can be determined by contacting COCHRAN.

Any defective Product, unless cause is specifically excluded in the "Warranty Conditions and Limitations" section below, will at the sole discretion of COCHRAN, be repaired or replaced with a new or refurbished unit of comparable or better function and/or condition. COCHRAN is not responsible for any incidental or secondary damages as a result of Product malfunction.

WARRANTY CONDITIONS and LIMITATIONS: Product must have been obtained from a COCHRAN Authorized Dealer. Contact COCHRAN for verification of dealer status. This Limited Warranty is not transferable.

The Product Warranty Registration form on the COCHRAN web site (www.divecochran.com) must be completed within 15 days of purchase in order to validate the Limited Warranty.

Failure to provide proper care for this Product will render this Limited Warranty null and void. Damages or malfunction resulting from accidental or deliberate abuse, tampering, battery leakage, exceeding maximum intended operating depth or other parameters, extreme heat or cold, or other conditions which COCHRAN may deem to be outside the intended scope of this Limited Warranty are not covered. **This Limited Warranty does NOT cover batteries, and battery life.** This Limited Warranty will be rendered null and void if an attempt is made to establish communications with the DDR-450 with any hardware and/or software other than the Cochran approved Analyst® Interface.

The OWNER is responsible for shipping this Product to COCHRAN for service, and paying all associated costs, including shipping, insurance, and import duties. OWNER may take Product to an Authorized Dealer to arrange service under terms of this Limited Warranty. COCHRAN will return Product to OWNER or Dealer via a method and carrier of its choosing. Costs for requested expedited return shipping would be the responsibility of OWNER. Product returned for service under terms of this Limited Warranty must be accompanied by a photocopy of the original sales receipt in order for warranty repair or replacement to be performed if the Warranty Registration is not on file.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, WHETHER ORAL OR WRITTEN, EXPRESSED OR IMPLIED. COCHRAN UNDERSEA TECHNOLOGY SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No Cochran Undersea Technology dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.



Cochran
UNDERSEA TECHNOLOGY
A Division of Cochran Consulting, Inc.

Diving Into The 21st Century
www.divecochran.com

Cochran DDR-450 Owner's Manual

English - Imperial
Ver: DDR450-2.00

For your records, please fill in the following:

Serial Number: _____

Your Name: _____

Your Contact: _____

Purchase Date: _____

Purchase Place: _____

Address: _____
