

1. TDI – Semi-Closed Circuit Rebreather Instructor Course - Unit Specific- Atlantis I / Dolphin / Ray / Azimuth

1.1 Introduction

This is the Instructor level certification course for Instructors wishing to teach the Draeger and Azimuth Nitrox semi-closed circuit Rebreather course. The objective of this course is to train Instructors to teach recreational Nitrox Rebreather diving, and to develop basic Rebreather diving skills appropriate to diving within the normal recreational depth limits for no-decompression diving.

1.2 Qualifications of Graduates

Upon successful completion of this course, graduates may teach the TDI Nitrox Semi-Closed Circuit rebreather no-decompression course not to exceed the manufacturers designed depth maximum. This course is manufacturer and unit specific.

1.3 Who May Teach

Who may teach this course:

1. Any active TDI SCR Rebreather Instructor Trainer may teach this course. Specific IT certification required for each specific rebreather.

1.4 Student – Instructor Ratio

Academic:

1. Unlimited, so long as adequate facility, supplies and time are provided to insure comprehensive and complete training.

Confined Water (Swimming pool-like conditions):

2. N/A

Open Water (Ocean, lake, quarry, spring, river or estuary):

3. A maximum of six (6) students per Instructor. However, it is the instructor's discretion to reduce this number as conditions dictate.

1.5 Student Pre-Requisites

The student must:

1. Be a minimum age of eighteen (18).
2. Show proof of minimum certification of TDI Rebreather Diver. Specific certification required for each specific rebreather.
3. Show proof of minimum certification of TDI Nitrox Instructor (or equivalent).
4. Show proof of minimum of ten (10) Semi-Closed Rebreather logged dives (dives conducted during this course **can not** be included).

1.6 Course Structure and Duration

Open Water Execution:

1. Four (4) dives.

Course Structure:

2. TDI allows instructors to structure courses according to the number of students participating and their skill level.

Duration:

3. The minimum number of classroom and briefing hours is six (6).

1.7 Administrative Requirements

The following is the administrative tasks:

1. Collect the course fees from all the students.
2. Ensure that the instructor candidates have the required equipment.
3. Communicate the training schedule to the instructor candidates.
4. Have the instructor candidates complete the Liability Release and Medical history forms.
5. The Instructor Trainer must review the Liability Release and Medical Forms before starting on the course.

Upon successful completion of the course the Instructor Trainer must:

6. Complete the TDI Instructor Registration Form and send the Registration Form to TDI HQ.
7. Award card.

1.8 Required Equipment

The following are required for this course:

1. Semi-closed Circuit Rebreather Instructor Guide.
2. Semi-closed Circuit Rebreather Diver Manual.
3. TDI Standards and Procedures Instructor Manual.

The following equipment is required for each student:

4. Semi-closed circuit Rebreather that instructor candidate is getting qualified for.
5. Buoyancy compensator with power inflator.
6. Depth gauge and automatic bottom timer and / or dive computer.
7. Mask, fins.
8. Exposure suit suitable for the diving environment.
9. Knife.
10. Slate and pencil.
11. Bailout bottle with a minimum capacity of three hundred and seventy (370) liter / thirteen (13) cubic feet (except if using the Ray or Azimuth).

1.9 Required Subject Areas

Instructor Trainers must use the TDI Semi-Closed Circuit Rebreather Student, Instructor Guide, manufacturers manual and the current TDI Standards and Procedures Instructor Manual, but may

also use any additional text or materials that they feel help present these topics. The instructor candidates knowledge on the following subjects must be evaluated:

1. History of Rebreathers
2. Rebreather Physiology
 - A. Oxygen toxicity.
 - B. Hyperoxia.
 - C. Hypoxia.
 - D. Asphyxia.
 - E. Hypercapnia.
 - F. Hypocapnia.
 - G. Nitrogen management.
3. Mechanics of a Rebreather
 - A. Scrubber canister.
 - B. Scrubber materials.
 - C. Scrubber endurance.
 - D. Breathing bag.
 - E. Mouthpiece and hoses.
 - F. Exhaust valve.
 - G. Inlet flow valve.
4. Gas Consumption
 - A. Cylinder sizes.
 - B. Flow rates.
 - C. Depth and workload.
 - D. Oxygen Percentages (for cylinder and breathing bag).
 - E. Using flow rate calculation.
5. Problem Solving
 - A. Canister flooding.
 - B. Mouthpiece loss.
 - C. Scrubber exhaustion.
 - D. Breathing bag rupture.
 - E. Battery or censor loss.
 - F. Open circuit bailout system.
 - G. Post problem maintenance of equipment.
6. Dive Computers
 - A. Mix adjustable.
 - B. O₂ integrated.

1.10 Required Skill Performance and Graduation Requirements

The following skills must be completed by the Instructor candidate. The maximum training depth shall not exceed the manufacturers design limit.

1. Demonstrate properly analysis of all gas mixtures to be used.
2. Demonstrate a complete systems check and Rebreather configuration.
3. Demonstrate adequate pre-dive planning.
 - A. Limits based on personal gas consumption.
 - B. Limits based on oxygen exposures at planned depth with actual mix.
 - C. Limits based on nitrogen absorption at planned depth with actual mix.
4. Properly execute the planned dive within all pre-determined limits.
5. Demonstrate the proper procedures for
 - A. Buoyancy control.
 - B. Bail-out.
 - C. Mouthpiece removal.

- D. Ascent techniques.
 - E. Safety stops.
 - F. Buddy checks.
 - G. Simulated emergency.
6. Properly execute the break down and maintenance of Rebreather

In order to complete this course, students must:

- 7. Satisfactorily complete the TDI Semi-Closed Circuit Rebreather Course written examination and be able to adequately explain each answer to a prospective student.
- 8. Demonstrate mature, sound judgment concerning training, dive planning and execution.
- 9. Complete all open water requirements safely and efficiently.
- 10. Demonstrate proficiency in teaching the TDI Semi-Closed Circuit Rebreather Diver Program.
- 11. One (1) graded presentation on a Semi-closed Circuit Rebreather topic.

1.11 Recommended Support Material

Rebreather PowerPoint