



NAUI SEMI CLOSED REBREATHERS

3 days

Costs include:
Extra coasts:

Rebreather hire, Gas mixes, Soda Sorbe
Certification

OVERVIEW

This course is to provide the EANx certified diver with the training and experience necessary to understand the hazards and minimize the risks of using a Semi-closed Rebreather (SCR) while breathing Nitrox mixtures of 32% to 80% (oxygen) .

QUALIFICATIONS OF GRADUATES

Upon successful completion of this course, graduates are considered competent to plan and execute unit specific SCR dives up to 100 fsw (30 msw) without direct supervision providing activities and areas dived approximate those of training.

WHO MAY TEACH

This course may be taught by active status NAUI Instructors who:

- are certified as NAUI SCR Divers with 50 logged underwater hours (SCR unit specific) in varied environments and depths, and
- have completed the NAUI SCR Instructor Workshop, and
- have completed the NAUI SCR Instructor application process and received written approval to teach this course from the NAUI Training Department.

RATIOS

- Confined Water Supervision - A maximum of four students per active NAUI Instructor is allowed. *Assistants with unit specific SCR diving experience are strongly recommended but do not increase student –toinstructor ratio.*
- Open Water Supervision - A maximum of two students per active NAUI Instructor is allowed. *Assistants with unit specific SCR diving experience are strongly recommended but do not increase the studentto-instructor ratio.*

PREREQUISITES FOR ENTERING THE COURSE

- Minimum age of 18 .
- Minimum certification of NAUI EANx Diver (or equivalent).
- Minimum of 50 logged dives with 20 dives utilizing EANx

COURSE POLICIES

- **Classroom/workbench hours** - 20 estimated.
- **Confined water hours** - three hours.
- **Open water dives/hours** - at least four dives and cumulative dive time of at least four hours.

Note: This is a no-required decompression obligation course and maximum training depths shall not exceed 100 fsw (30 msw) or PO₂ of 1.4 ATA .

EQUIPMENT

Ocean Zone Divers, 67/19 Moo 10, Patak Rd, Tambon Chalong, 83130 Phuket Thailand
Tel: +66 (076) 381881 GSM: +66 (09) 6474707 Fax: +66 (076) 381881
www.oceanzonedivers.com email: info@oceanzonedivers.com

The following equipment is required for each student in addition to that required by “Policies Applying to All NAUI Diving Certification Courses-Equipment:”

- Depth gauge, compass, timing device and dive computer.
- Dive knife/tool, emergency signaling device, slate and pencil.
- Semi-closed Rebreather specific to the course.
- Cylinder of appropriate size for the Semi-closed Rebreather.
- Redundant independent breathing gas system (30ft³/ 850 liters minimum supply) with regulator, submersible pressure gauge and four to five foot (1 to 1.5 meter) hose designated and prepared for emergency ascent and gas sharing.
- Oxygen analyzer (may be provided or rented for use during the course.)
- Ascent line reel and lift bag with a minimum of 50 lb. (23 kg.) lift, biodegradable up line, Jersey up line or other up line that is adequate for planned depth.
- Jon lines and other rigging lines as dictated by conditions of the dive site.
- Air and EANx computers are allowed for use as depth and timing devices for dive planning.
- Decompression tables must be carried with the diver during dives.
- Ball valve flow meter (may be provided or rented for use during the course)

SKILL REQUIREMENTS

• The students are to analyze their own breathing gas mixture and to plan and safely execute each dive. Pre dive planning shall include the pre-dive check of the specific SCR unit and shall include: check gas cylinders for contents, check gas flow rate, inspect harness and BCD, remove hoses and mouth piece and disinfect if necessary, check counter-lung for water ingress, inspect pneumatic assemblies, check canister and recharge if necessary or log canister duration, inspect O₂ sensor, positive and negative pressure checks, service o-rings, establish oxygen and nitrogen limits and exposures, with contingency dive planning to include: safety stops, emergency redundant breathing gas system procedures, problem solving and pre-dive calculations to include EAD, inspired O₂ and O₂ metabolizing. Plan the dive considering personal and team gas consumption rates. The students shall demonstrate proper buoyancy control skills at a depth not to exceed 20 fsw (6 msw) before they may be taken to deeper depths. Students are to participate in a diver rescue simulation to include management of a diver experiencing underwater convulsions, hypoxia, flooded system, and out of breathing gas scenario. Each diver is to demonstrate switching to a redundant breathing gas system at least four times during the course. Each diver will demonstrate proper counter lung flush procedures prior to ascent on each dive. Each diver shall perform an ascent with a line reel and lift bag while simulating a required decompression stop to manage a decompression ceiling obligation. Proper post dive procedures shall be demonstrated after each dive and include switch off and rinse the unit, check and record cylinder contents, shut off valves and bleed lines, remove and disinfect hoses and allow hose and mouth piece to dry, wipe face of scrubber canister with disinfectant solution, calculate and record time remaining on CO₂ absorbent, blank off breathing loop ports, log and clearly mark unit with canister use expended and secure gauges and displays. At least one dive during training must have an actual dive time of 60 minutes.

ACADEMIC REQUIREMENTS

• **Applied Sciences** – This area is a review and continuation of the material covered in the NAUI Master SCUBA Diver and NAUI Nitrox courses with special emphasis on: advantages and limitations of high fractions of enriched air nitrox mixtures, oxygen toxicity (whole body and central nervous system otu/uptd’s), tracking oxygen exposures, hypoxia, nitrogen narcosis, perfusion and diffusion rates, tissue inert gas tension, equivalent narcosis depths, carbon dioxide toxicity, definitions of rebreathers, five requirements of rebreathers, functions of different

rebreathers, assembly of course specific rebreather components and function of all components, diver position underwater while using rebreathers, ballasting for rebreathers, canister filling, and unit disinfecting, influence of counter lung position on breathing resistance, effects of pressure on breathing loop, breathing gas and diver, metabolic consumption rates of oxygen, carbon dioxide build-up and stress, vital capacity, total lung capacity, respiratory minute volume, effects of hydrostatic pressure on breathing loop, static, negative and positive lung loading, gas requirements and limitations, inspired oxygen calculations, oxygen metabolizing calculations and equivalent air depth calculations, individual and “team” gas requirements, flow rates, contingency planning, chamber locations, evacuation procedures, communication and emergency breathing gases.

- **Diving Equipment** – This area reviews divers’ equipment requirements for gas mixtures containing up to 80% oxygen content and a complete review of manufacturer requirements for specific semi-closed rebreather.

- **Dive Tables** – this is to cover air depth calculations for use with any dive table and computer software-generated tables or EANx tables. Also to be covered are dive planning requirements and limitations of gas supply, i.e. gas management planning for individual diver and “team”, oxygen and nitrogen for a variety of dive scenarios.

EXAMINATIONS

See “Policies Applying to All Courses; Evaluation and Documentation.”