CLOSED CIRCUIT REBREATHER DIVER

(CCR Diver, REB 2 DIVER)

Intention of this course

The Intention of this course is to dive safely with closed circuit rebreathers. According to each dive, different EANx inhalation gases will be used.

Instruction by ProTec CCR Instructor.

Training environment

Any open water, with good visibility for expanded dives in small and middle depth, are suitable as training environment. The maximum diving depth is 50 msw

Prerequisites

- Advanced diving skills as an SCR Diver should be proved to the instructor.
- Certification of ProTec SCR Diver
- More than 10 SCR dives (proved) that are carried out within the range of 40 meter.

Accomplishment

The instructor may adapt the course program according to the local conditions. Only the faultless accomplishment of one module of the course program permitted the advance to the next course module.The instructor is required not to allow any inadmissibility concerning also the equipment.

The theoretical training modules are always to be carried out in tow divided steps:

- General subject matter that is suitable for all types of rebreather.
- Specific equipment part according to the used training units, strict on manufacturer's specifications.

Each diver should always carry the complete equipment including bailout/spare bottle. It is not allowed to use normal air for rebreather as an inhalation gas. EANx (with the option pure Oxygen in special dives according to the equipment and manufacturer's specifications) is exclusively to be used.

Max. depth 50 msw, max. deco time 12 min. allowed at module 6.

Theoretical lessons

General Part:

- To check up the skills of advanced diver and Nitrox diver:
- Partial pressure.
- Oxygen toxicity.

Class 1 -General Introduction.

- History and development.
- CCR types.
- The usage
- Advantages and disadvantages according to SCR

Class 2 - Technique

- CCR in general:
  - CO2 –Absorption
  - Breathing bag
  - Mouthpiece &hoses.
  - Exhaust valve.
  - Gas supply, continuous adjustment for O2
  - Computer and gauges and controlling.
  - Bailout (spare systems).
  - Classroom presentation of training equipment (dry).
- Specific rebreather type according to manufacturer

Class 3 – Technique details

- Gas consumption
- Oxygen
- Flow rate & gas flushing
- O2 – adjustment - how it works
- Details about specific equipments

Class 4 - Decompression theory

- Planning dives.
- Deco tables
- Deco planning

Class 5 - Problem solutions

- Flow (water inside the system)
- Mouth piece handling UW – switching to spare air source
- O2 – adjustment malfunctions (to avoid or recognise it)
- Loss of sensors

Class 6 - To dive with CC Rebreather

- Getting in.
- Buoyancy
- Ascending
- Washing up
- Security topics

Class 7

Maintenance &service (presentation on the basis of training equipments)

Practical training

Equipment

Apart from/instead of the standard equipment the following has to be used/carried with:

- Sufficient cold insulation = dry diving suit at temp. under 15° C.
- UW slate (multi – sheet for example; executive slate).
- Stage bottle (spare bottle with EANx or air as bailout and for buoyancy)

The diver should be able to use all part of the equipment UW without any assistance – tank valves too. Max. 2 divers per supervisor.

Quality requirements

Best buoyancy: The divers should always completely control and consider the dive and act with self – assurance. The permission to the next difficult course module can just be given after the positive termination of the module before. After a negative result, the diver should be sent to the surface or a break off should be made.

Theorie part for each UW practise module

- Planning**:** To discuss the way by sketches, air management, to specify the tasks and positions of each particularly diver, to check abort – emergency plan.
- Briefing**:** (short before the dive/in front of the place): To repeat the important points inclusively an equipment check.
- Debriefing**:** To recognize the mistakes and improvement possibilities, to revise them.

Module 1

Gear on, check buoyancy as well as operability and function, Training on surface and at the depth of 1-3 msw (or indoor pool).

Module 2

Now open water: Standard check up on the surface, additional check- up at the depth of 3-5 meter, and then carry on diving

Module 3

To test the check – up at the depth of 10 meter:

To turn off mouth pieces and change to the spare bottle as well as to exercise flushing up and ascending.

Module 4

Like module 2, maximum depth is 20 meter.

Module 5

Like module 2, maximum depth is 25 - 35 meter.

Module 6

Like module 2, maximum depth is 40 - 50 meter.

Courseware

Visit ProTec members area for any material / price list.

- Checklist

- Manufacturer's manual & operating instructions.