
PADI CCR Type R

Open Water and
Advanced CCR Type R

PADI Standards and Overview

Recreational and Technical Diving with Rebreathers

Recreational and technical diving differ with rebreathers, just as they do when using open-circuit technologies. It is important to understand the distinctions so you can guide divers entering CCR/SCR diving into the PADI Rebreather Diver course (recreational) or the Tec 40 CCR, Tec60 CCR, Tec 100 CCR Diver course (technical).

The biggest difference between recreational rebreather diving and technical CCR diving, at the entry level, relates to how divers respond to life-support related problems. This is central to the philosophies and demands of using rebreathers in the recreational versus technical environments.

In recreational or technical open-circuit diving, the primary response to a life support failure (out of air, etc.) is to switch to another life support system such as an alternate air source (recreational diving) or secondary regulator (tec diving). Beyond minor issues (such as sand in a second stage), no attempt is made, during the dive, to return to the faulty regulator.

Recreational rebreather diving follows the same approach. The default response to a serious warning indicator is for the diver to switch to open-circuit bailout and end the dive. The types of issues related to life support that a recreational rebreather diver would attempt to resolve to stay on the rebreather are small in number and uncomplicated. This is consistent with open-circuit diving and familiar to recreational divers. Retaining the philosophy of switching to another life support system significantly simplifies what divers need to know to respond appropriately to a Type R rebreather emergency.

Technical CCR diving differs from open-circuit tec diving and both open and closed-circuit recreational diving in that the diver may, depending upon the circumstances, abort the dive while continuing to use a malfunctioning CCR. Following a serious warning, the diver bails out to open-circuit, but then diagnoses the fault. Depending upon the nature of the problem and the circumstances, a tec diver may elect to return to the CCR and offset the problem using manual controls and other emergency procedures. Although a tec diver should have adequate open-circuit bailout gas to safely abort the dive, returning to the CCR substantially reduces decompression time and conserves gas, retaining resources for handling subsequent problems that could occur.

Learning to diagnose and respond to CCR problems by returning to the unit adds substantially to the training requirements compared to recreational rebreather use. It also adds to the complexity of operating the CCR. Type R rebreathers typically eliminate redundant gauges and manual controls required on Type T (technical) CCRs. Type R rebreathers may also be SCRs (semiclosed-circuit rebreathers), which are not commonly used in tec diving. These differences in hardware and psychology are why, before making dives that involve physical overhead (caves, wrecks) or virtual overhead (decompression stops), the technical CCR diver needs adequate experience using the hardware and applying this mindset within no stop limits or very limited decompression diving.

PADI Rebreather Diver/Advanced Rebreather Diver: For divers interested in rebreathers for their duration, silence and maximized no stop dive time in open water to 30 metres or less (40 metres with PADI Deep Diver training). These divers are not interested in tec diving and don't see an

interest in the immediate future. (Team Blue Immersion is going to offer PADI Rebreather and PADI Advanced Rebreather courses from February 2012)

Tec 40 CCR Diver: For tec divers taking up CCR diving, or recreational divers who are entering tec diving as CCR divers. These are divers clearly interested in using CCR technology for diving deeper than 30 metres/100 feet, decompression and overhead environments. As Tec 40 CCR Divers, the divers will be limited to and qualified for 40 metres and very limited decompression (a single stop of no more than ten minutes). The training includes problem diagnosis and returning to the loop (when appropriate) as foundational skills for decompression diving as Tec 60 CCR Divers, and beyond.

It's important to recognize that Tec 40 CCR Diver limits are very similar to Advanced Rebreather Diver limits, but the divers' interests and approaches to diving differ substantially. Advanced Rebreather Divers are not interested in extending their limits with rebreathers at the moment; they are qualified within the envelope in which they want to dive. Tec 40 CCR Divers, by contrast, are just entering their target envelope. They must gain CCR experience within the initial narrow limits, but apply tec diving mental processes and skills as part of the necessary growth required for advancing as Tec CCR divers. (Team Blue Immersion is going to offer Tec40 CCR courses starting in the middle of April 2012.

Tec 60 and Tec 100 CCR Diver is a Technical CCR Course that teaches the diver to dive to 60 meters and 100 meters using Trimix as a diluent and being trained to execute decompression with no time limitations. (These courses are being released at the end of 2012)

NEWS REBREATHER FORUM 3.0 – May 18 20, 2012

Over the last 18 years, Rebreather technology, ethos, training and procedures have radically changed and continue to change as more units come on the market. Rebreather Forum 2.0 (RF2) was held in September 1996 in California, USA. The meeting was an iconic event in the history of the diving industry and has influenced developments ever since.

Rebreather Forum 3 is jointly organized by PADI, AAUS & DAN. If you haven't heard about it yet it's time to get up to speed for an event that promises to be as ground breaking as its forbears.

Rebreather forum 3.0 will bring together the world's experts in all aspects of rebreather diving. The talks, discussions and seminars are a unique opportunity to hear these experts speak, for them to speak to each other and for the rebreather community to establish new protocols and recommendations, to take rebreather diving forward. RF3 will address the major issues surrounding current rebreather technology and its application in sport diving.

PADI Speakers include:

Dr Drew Richardson, President and COO

Mark Caney, Vice President

*James Morgan, Vice President
Martin Robson, Technical Field Consultant*

For further discussion visit the TecRec blog, or for more information on exhibitors, social events and logistics please visit the RF 3 Website: www.RF30.org. The venue is the Caribe Royale Hotel, Florida, USA and the event runs from May 18th to 20th 2012.

Unit Specificity

Rebreathers lack the same degree of standardization that you find in open-circuit scuba. Therefore, it is necessary for divers to qualify and be certified on each rebreather model. Once certified as a PADI Rebreather Diver, Tec 40 CCR Diver (or above) with one unit, however, divers do not need to repeat the entire course with a new unit. Instead, to qualify at the same level with a different rebreather, they demonstrate skills and other key concepts specific to the new unit and their present training level in a CCR Qualifier program. This is similar to the approach used in commercial aviation; pilots obtain their licenses, but must qualify for individual aircraft.

Manufacturer Requirements in Training

Because CCRs vary by make and model, manufacturers may specify minimum numbers of dives, certain skills or other requirements for diving their units. The PADI Rebreather Diver and Advanced Rebreather Diver courses recognize that manufacturers are experts on their units. Any manufacturer requirements that are not listed in the knowledge development or skill requirements of the PADI Rebreather Diver and/or Advanced Rebreather course must still be covered. These requirements must all be covered in the CCR Qualifier program.

Standards at a Glance – PADI Rebreather Diver

Minimum Instructor Rating: PADI Rebreather Instructor

Minimum Certified Assistant Rating: PADI Divemaster or higher level PADI Member with PADI Advanced Rebreather Diver certification

Prerequisites: PADI Open Water Diver, PADI Enriched Air Diver or qualifying certifications from another training organization. 25 logged dives, 18 years old

Ratios: 4:1; 6:1 with certified assistant

Equipment: As required by General Standards and the environment; Type R rebreather listed by PADI Office

Gases: Air diluent; oxygen; EANx allowed if specified by manufacturer (EANx required for SCRs)

Depths: Maximum depth not to exceed 18 metres/60 feet. Individual dives have differing minimum and maximum depths.

Hours: Daylight hours

Minimum Number of Dives: 1 confined water, 1 confined or open water, 4 open water (6 total)

Materials: Instructor

- PADI Rebreather Diver and Advanced Rebreather Diver Instructor Guide
- PADI Rebreather Diver Exam
- PADI Rebreather/Advanced Rebreather Diver Instructor wet guides

- All student materials
- Manufacturer's manual and/or other support literature for rebreather used in course
- Manufacturer's checklist (if applicable)

Materials: Student

- PADI Rebreather Diver and Advanced Rebreather Diver Manual
- PADI Rebreather Pre-dive Checklist Slate
- PADI Rebreather and Advanced Rebreather Diver Key Skills Video
- Manufacturer's manual and/or other support literature for rebreather used in course
- Manufacturer's checklist (if applicable)

Student Diver Prerequisites – PADI Rebreather Diver

By the start of the course, a diver must:

1. Be certified as a PADI Open Water Diver or have a qualifying certification from another training organization.
2. Be certified as a PADI Enriched Air Diver or have a qualifying certification from another training organization
3. Be at least 18 years old.
4. Have at least 25 logged dives.

Standards at a Glance – PADI Advanced Rebreather Diver

Minimum Instructor Rating: PADI Rebreather Instructor

Minimum Certified Assistant Rating: PADI Divemaster or higher level PADI Member with PADI

Advanced Rebreather Diver certification

Prerequisites: PADI Open Water Diver, PADI Rebreather Diver or qualifying certifications from another training organization; certified for Type R rebreather used in the course. 30 logged dives, 18 years old

Prior to certification: PADI Advanced Open Water Diver

Ratios: 4:1; 6:1 with certified assistant

Equipment: As required by General Standards and the environment; Type R rebreather listed by PADI Office; bailout cylinder with 850 litres of free gas (or more) with open circuit regulator, rigging for attachment to the diver and hose of sufficient length to share gas with another diver.

Gases: Air diluent; oxygen; EANx as specified by manufacturer (EANx required for eSCRs)

Depths: Maximum depth not to exceed 30 metres/100 feet. Individual dives have differing minimum and maximum depths.

Hours: Daylight hours

Minimum Number of Dives: 1 confined water, 4 open water (5 total)

Materials: Instructor

- PADI Rebreather Diver and Advanced Rebreather Diver Instructor Guide
- PADI Advanced Rebreather Diver Exam
- PADI Rebreather/Advanced Rebreather Diver Instructor wet guides
- All student materials

Materials: Student

- PADI Rebreather Diver and Advanced Rebreather Diver Manual
- PADI Rebreather Pre-dive Checklist Slate
- PADI Rebreather and Advanced Rebreather Diver Key Skills Video

Student Diver Course Prerequisites and Certification Requirements – PADI Advanced Rebreather Diver

By the start of the course, a diver must:

1. Be certified as a PADI Open Water Diver or have a qualifying certification from another training organization.
2. Be certified as a PADI Rebreather Diver or have a qualifying certification from another training organization
3. Be at least 18 years old.
4. Have at least 30 logged dives.
5. Be qualified on the Type R rebreather used in the course. If the diver was certified as a PADI Rebreather Diver using a different rebreather from the one that will be used in the course, the diver must complete the PADI Rebreather Qualifier program for the new rebreather. See the PADI Rebreather Qualifier Instructor Guide.

Prior to certification, a diver must

1. Be certified as a PADI Advanced Open Water Diver or have a qualifying certification from another training organization.

If the student diver is not a PADI Advanced Open Water Diver at the beginning of the course and the student completes the knowledge development requirements for the Advanced Open Water program Deep Adventure Dive, the Advanced Rebreather Diver Training Dive Three may be credited as the Deep Adventure Dive if it is made to 18 metres/60 feet or deeper. No other dive in the Rebreather Diver course or the Advanced Rebreather Diver course may be credited as an Adventure Dive.

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