

Type T Rebreather - Feature List

This list outlines the features of a rebreather will typically require to comply with the requirements of the PADI TecRec CCR courses. PADI maintains a register of rebreathers that manufacturers have specified meet the key features of a Type T rebreather and have successfully undergone internationally recognized third-party testing against an appropriate standard such as EN14143. Only rebreathers that have been included in this central register may be used for PADI TecRec rebreather courses.

1. The unit should be of robust design and engineered so that it cannot be assembled incorrectly by the user
2. The diver is prompted to check mouthpiece mushroom valve function and perform a loop positive/negative pressure check during pre dive checks
3. The diver should have a simple status indicator in his line of sight indicating if all is well or that a problem exists (eg: head up display)
4. The diver should be able to switch to open circuit bailout without removing his mouthpiece using a single action with one hand
5. The diver can monitor the amount of remaining gases carried
6. The diver is provided with an indicator of remaining battery life and is warned if it is becoming critically low
7. If oxygen injection is electronically controlled, the unit includes at least one system of redundant electronics
8. The diver can select the pO₂ setpoint manually
9. The unit will function to at least 100 metres
10. The unit will maintain a near constant pO₂ in normal use
11. The diver is warned* if pO₂ is too high
12. The diver is warned* if pO₂ is too low
13. The unit has a system to warn* the diver if pCO₂ is too high or it has a system for estimating remaining scrubber duration
14. The loop includes an over pressurisation relief valve
15. The unit can continue to operate with some water in the loop and includes a method for removing water from the system. The unit can be used in an emergency mode without an oxygen supply (eg: using manual diluent only/semi-closed)

16. Where the rebreather interfaces with onboard electronics, the diver is able to indicate whether he is in CC or OC mode
17. The diver can inject O₂ or diluent into the loop manually
18. The unit has a 'black box' data recorder function or is used with a dive computer providing this function.
19. The rebreather has undergone nationally or internationally recognized third-party testing against an appropriate standard. Examples would include meeting EN14143 (and having attained CE marking) or meeting the *NOAA Minimum Manufacturing & Performance Requirements for Closed Circuit Mixed Gas Rebreathers*
20. The manufacturer must include an operator's manual that clearly explains how to execute all operations the user will have to perform, how to recognise when any automatic operations have not operated correctly, and the actions to take in such cases. The manufacturer must update the manual if the unit's design evolves over time

** Warnings must be very apparent and not likely to be missed by the diver. A vibrating mouthpiece alarm is ideal, coupled with a visual alarm in the diver's line of sight and/or an audible alarm. A secondary warning discernable to other divers on the back is highly desirable.*