



Closed Circuit Breathing System (CCBS)

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OVERVIEW

The Closed Circuit Breathing System (CCBS) is a multi-person, electronic, mixed gas rebreather used to provide the correct decompression gas to divers, who are undertaking planned surface decompression or who are being treated for decompression illness.

When supplied with 16/84 Heliox and 100% O₂, the system can mix the full range of decompression gases required for the current range of decompression tables in use. The exhaled gas is scrubbed to remove CO₂ and the metabolised O₂ is replaced. The gas can then be resupplied to the diver. This rebreather system uses only a fraction of the gas that would be required if the diver exhaled to the chamber or overboard.

This unit can be fully integrated into the chamber system being used and be built around other chamber equipment.

The system is fully automated with use of PLCs and achieves the required level for Functional Safety as specified in IEC 61508 and IEC 61511.

SPECIFICATION

- Rebreather circuit
- Features Heliox / O₂ supply, overboard dump, O₂ make up, purge gas, blower power capabilities
- Improved user interface
- All materials are compatible for use with 100% O₂

CONTROL SYSTEM

JFD Hyperbaric Monitoring and Control System, which includes the latest technology and is compliant to meet the requirements of Safety Integrity Level (SIL) 1.

The control system can be designed to user requirements and features:

- Analysers
- HMI Display (shows depth profile, low pressure and high pressure supplies)

KEY FEATURES

The System features:

- External Control System - this is fitted outside the chamber and utilises JFD's modern electronic control system, based on existing technology developed for saturation dive systems.
- Chamber Data Recording System (CDRS) - This system monitors and records the depth, O₂ and C₂ levels within the chambers. Oxygen injection is used to maintain O₂ to a specified set point. All data is available for subsequent download.

STANDARDS

- EN14143 Respiratory Equipment - self-contained rebreathing diving apparatus
- ISO 10297 Gas Cylinders / Cylinder Valves - specification and type testing
- Lloyds Rules for the construction and classification of submersibles and diving systems
- IEC61508 Functional Safety of electrical / electronic / programmable electronic safety-related systems (for manufactures and suppliers of devices)
- IEC 61511 Functional Safety Instrumented Systems for the Process Industry Sector
- IEC61131 Programmable Controllers - programming languages

