

# Stealth Multi-Role Rebreather

Considered to be the benchmark in state-of-the-art underwater life support technology for Mine Counter Measures Explosive Ordnance Disposal (MCM EOD) and Special Forces (SF) Multi-Mission requirements, SMR offers increased levels of diver safety, equipment reliability, maintainability and availability together with significant operational capability and mission versatility.

Being electronically controlled, SMR may be used for MCMEOD operations to a depth of 54msw using an air diluent gas or to a depth of 120msw using a heliox or trimix diluent. SMR has been designed and tested to the highest standards of performance required for the most arduous operational and environmental conditions globally from the arctic to the tropics.

To ensure system performance meets and exceeds all requirements SMR has been designed, tested and complies with the most rigorous and recognised international standards, of most significance is full compliance with EN14143 - 'Respiratory Equipment – Self-contained re-breathing diving apparatus' and with software designed in accordance with IEC 61508 'Functional safety of electrical, electronic and programmable electronic safety-related systems'

## PRINCIPLES OF OPERATION

Using a system with multiple sensors and a safety rated control system SMR can monitor, control and inform the diver rapidly and accurately to changes in life support system status. A diluent gas (air, heliox or trimix) provides gas volume within the closed-circuit breathing system, whilst carbon dioxide (CO<sub>2</sub>) from the exhaled gas is absorbed by the scrubber unit by use of loose fill soda lime, pre-packed loose fill or cartridges.

The system also provides mission critical decompression status clearly displayed on a colour display module along with a head-up warning/alarm system.



## SPECIFICATION

Height	560mm (With 5L SBS)
Width	400mm
Depth	220mm
Weight	28.4kg (18kg - SMR Basic set, 3.4kg - Scrubber fill, 1.5kg - PBS Gas 2x2L @300bar, 5.5kg - 5L SBS system (charged))

## PERFORMANCE

Maximum depth (msw)	120 **
CO <sub>2</sub> Scrubber duration (hrs)	Standard Duration – up to 260 mins ** Extended Duration – up to 12 hours (Optional)**
Storage temperature	-30°C to +70°C
Air temperature operation	-20°C to +55°C
Sea temperature operation	-2°C to +38°C
Fresh water temperature operation	1°C to +35°C
Max. Safe Pressure	300 bar
Counterlung Volume	8L

## NON-MAGNETIC & LOW ACOUSTIC

SMR is fully-compliant with the requirements of AEODP-7 Class A (STANAG 2897 Class A) under both static and dynamic test conditions in all attitudes and for all components that may come into contact with magnetically sensitive ordnance. SMR surpasses the low acoustic test requirements of NATO STANAG AMP-15. SMR functions by analysing the breathing gas using either galvanic or digital oxygen sensors and through the automatic addition of 100% oxygen, the partial pressure of oxygen (PO<sub>2</sub>) is accurately maintained at a pre-set level dependent upon the depth.

## CERTIFICATIONS

EN 14143:2013	Respiratory equipment – Self-contained re-breathing diving apparatus
EN 250:2014	Respiratory equipment. Open-circuit self-contained compressed air diving apparatus.
EN 1809:2014	Diving equipment. Buoyancy compensators. Functional and safety requirements, test methods
MIL-STD-810H	Environmental Engineering Considerations and Laboratory Tests
MIL-STD-1330E	Change 1 Precision Cleaning and Testing of Shipboard Oxygen, Helium, Helium-Oxygen, Nitrogen, and Hydrogen Systems
NATO AEODP-7	Explosive Ordnance Disposal Equipment Requirements and Equipment.
NATO AMP-15	Standards for Naval Mine Warfare Acoustic Measurements
IEC 60335	Household and similar electrical appliances - Safety
UN 38.3	Classification of lithium metal and lithium ion cells and batteries

## FEATURES

- Fully closed circuit (for Semi-Closed see SMR-SC)
- Over-the-shoulder counter-lungs provide a clear chest
- Automatic diluent addition valve - manual make-up on demand
- Breathing loop variable and safety pressure relief systems
- Three independent oxygen sensors - galvanic/solid state
- Accurate, moisture-tolerant CO<sub>2</sub> warning sensor on high CO<sub>2</sub>
- Colour display system - critical dive data, warnings/alarms
- Half mask/full-face mask head-up LED displays

\* Dependent upon local oxygen exposure limitations

\*\* Dependent upon diver work-rate and water temperature