

**UNDERWATER  
PRODUCT  
PORTFOLIO**



**AVON**  
PROTECTION









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Avon Protection's  
MCM100 video

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# WE ARE INTERNATIONALLY RECOGNIZED FOR OUR ENGINEERING AND MANUFACTURING EXCELLENCE



Scan to watch the  
Avon Protection video



# Mission-critical protection

For military and first responders, Avon Protection is an end-to-end capability provider delivering mission-critical confidence. As the most field-tested equipment in the industry, we have real-world insight to innovate and stay steps ahead of ever-evolving threats. Through ease of use and enduring performance, we assure our protectors so they can complete the mission and come home safely, every time.



**Respiratory  
Protection**



**CBRN  
Protection**



**Underwater  
Systems**



**Thermal  
Imaging**

Protecting  
**4 million  
users**  
every day

Presence in  
**70+**  
countries

**World  
leaders**  
in mission-critical  
systems

**900+**  
employees



Our sister company Team Wendy is a global provider of ballistic head protection for military and first responder personnel around the globe. Together we are united by our mission to provide unparalleled integrated protection for those who protect us. To find out more about their products please visit: [teamwendy.com](https://teamwendy.com)

# MCM100 TRAINING COURSES



# MCM100 Training Courses

Avon Protection offer comprehensive Diver & Technician training courses that enable its global users to independently manage their MCM100 capability.

## **MCM100 Air Diver (40m) Air Diluent training**

- 5 day training program (prerequisite: military rebreather qualified diver)
- Teaches the MCM100 unit specific standard and emergency operating procedures. Dives are conducted using an air diluent to a max depth of 40m
- Course includes MCM100 Pre-dive setup, post-dive procedures and front line user maintenance

## **MCM100 Gas Diver (100m) training**

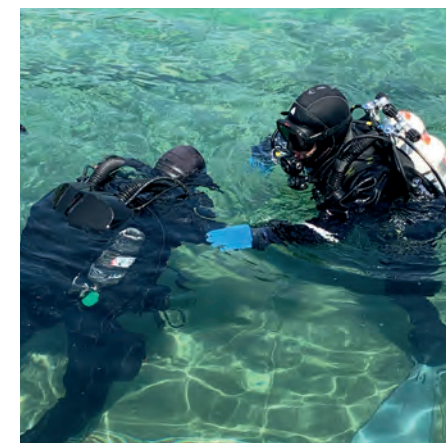
- 5 days (prerequisite is Air User course)
- 5 day training program (prerequisite: MCM100 Air Diver qualification)
- Teaches the diver to plan and execute dives using Heliox or Trimix diluents to a maximum of 100m (training depth typically limited to 60m)

## **MCM100 Air & Gas Instructor training**

- 3-5 days (prerequisite is either Air Diver or Gas Diver training)
- Advanced (Supervisor level) maintenance and fault-finding, class management and assessments
- Advanced configuration and dive planning instruction, and LRU maintenance procedures

## **MCM100 Technician training**

- 5 days
- Course includes complete through-life system maintenance procedures
- Technician level maintenance



# UNDERWATER SYSTEMS

MCMIOO™

CORE INTELLIGENT UNDERSUIT™

XBS™

BAILOUT SYSTEM™



# MCM100™

## MULTI-ROLE REBREATHER



### Greater than 4 hours duration at extreme work rates and depths.

The MCM100 is Avon Protection's state of the art electronically controlled, closed circuit, mixed gas military rebreather. Designed to excel in both shallow and deep-water military diving applications; optimized for Explosive Ordnance Disposal (EOD), Mine Countermeasures (MCM) and Special Operations diving. The market leading MCM100 delivers true multi-role military rebreather capability, incorporating cutting edge technology and innovative operational features, to deliver significantly enhanced diver safety and extended mission duration.

#### ADVANCED ELECTRONICS

- Multiple redundant electronics and rechargeable batteries.
- Advanced digital oxygen sensors with voting logic and 'bad sensor' removal.
- Moisture tolerant carbon dioxide sensor.
- Data acquisition facility with Bluetooth capability.
- Back-lit color handset with automated pre-dive and command-based alarms.

#### EASY BREATHING

- Extremely low work of breathing (WOB).
- High-performance open circuit Bailout valve (BOV) as standard.
- Automatic diluent gas addition valve.
- Automatic activation.
- Manual diluent and oxygen gas bypass valves.

#### OPERATIONAL FLEXIBILITY

- High-pressure composite cylinders as standard.
- Water-tolerant breathing circuit and water removal systems.
- Three carbon dioxide absorbent cartridge options.
- Reduced mission set-up time.

#### STEALTH TECHNOLOGY

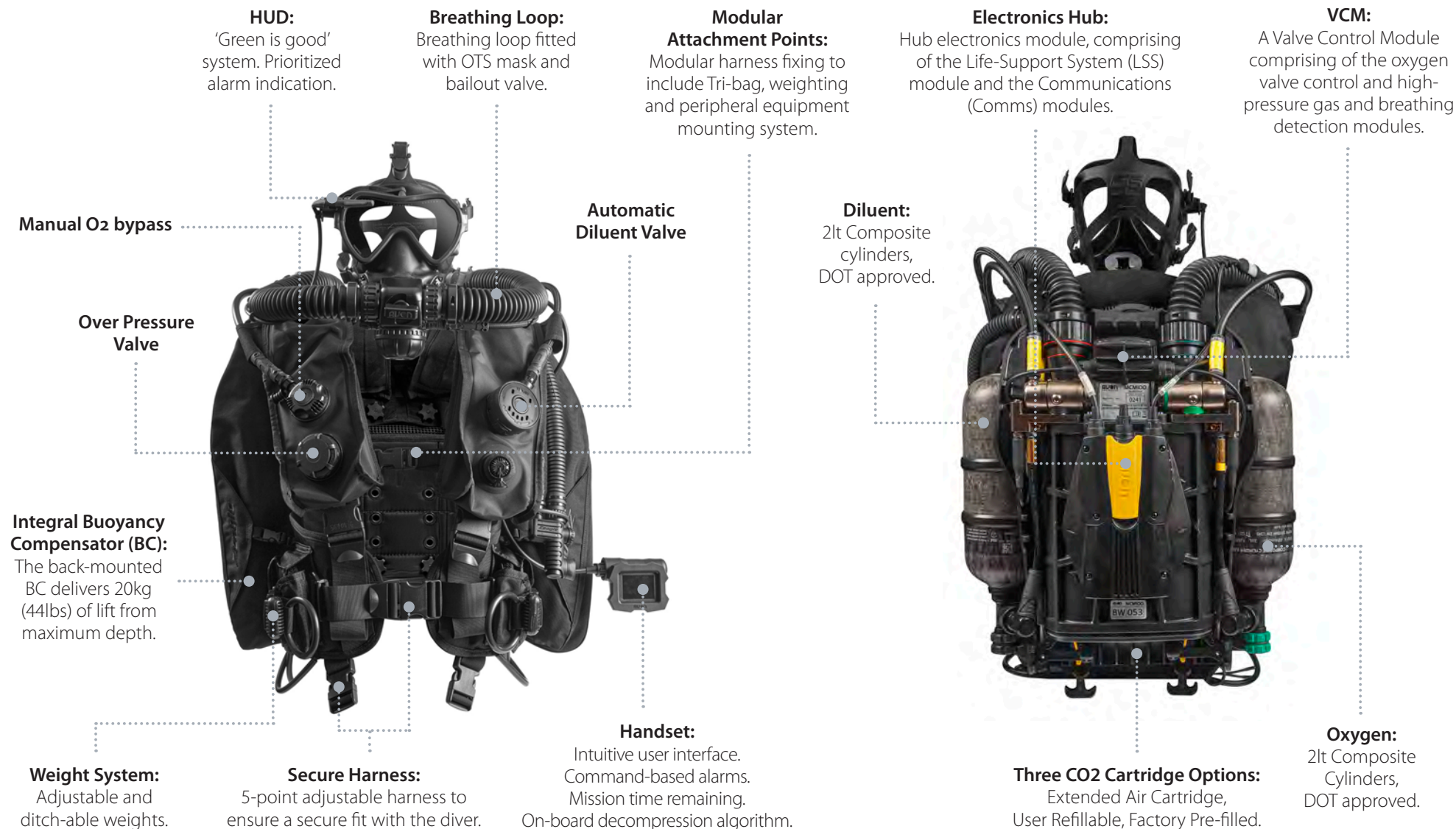
- A discreet LED Heads-up Display (HUD) indicating equipment status.
- Low magnetic signature and low noise.

#### SOFTWARE AVAILABLE

- Avon Dive Planner.
- MCM100 configuration software.
- Data download software.
- Training simulator.



# MCM100™ SYSTEM LAYOUT









# CORE INTELLIGENT UNDERSUIT™

## CORE TO THE MISSION

Our heated undersuit is designed specifically to combat non-freezing cold injuries for air, land and sea, and in turn, protects a diver's operational effectiveness.

The undersuit is unique in its capability to provide controlled heating to the diver and to regulate the user's body temperature across the autonomous heating zones (torso, hands and feet) at all times.

Our undersuit is compatible with both wet and drysuit diving systems or for use as a surface under-garment (small boat work, etc).

Undersuit, Glove and Sock sizes:

S	M	L	XL	XXL
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## SYSTEM FEATURES

- The unique combination of a 7-volt battery and over-current protection in the Core Intelligent Undersuit removes the risk of the overheating.
- Thermistors actively control the heating of individual panels based on diver skin and panel temperature.
- The system temperature setpoints are:  
Torso = 39°C +/- 1°C (102°F +/- 2°F).  
Glove = 19°C +/- 1°C (66°F +/- 2°F).  
Sock = 27°C +/- 1°C (81°F +/- 2°F).
- Specifically designed panels reduce the risk of overlapping and compression of the heating elements.
- Detachable gloves and integrated socks for optimum fitting. (Socks can be separated from the main garment to allow for repair/resizing).
- Detachable heating panels reduce burden of maintenance.
- Approximately 90 minutes battery endurance (if constantly heating all zones).
- Super flexible, low profile, cable system.

## PERFORMANCE

- The Core Intelligent Undersuit has undergone rigorous internal testing and field trials.
- Batteries certified to UN 38.3 / Configured with 7-volt battery.
- Weight: 9.410lbs (4.27kg) - includes all connectors and penetrators, and battery.
- Operating Temperature:  
Air = -2°C to 48.8°C (28°F to 120°F).  
Water = -2°C to 21°C (28°F to 70°F).





A capability enhancing collaboration  
with key military users and the  
market-leading manufacturer, SANTI.



# XBS™

## EXTERNAL BREATHING SYSTEM



The XBS is specifically designed to provide additional off-board open circuit bailout for divers operating the MCM100 rebreather, delivering improved functionality through the use of a quick disconnect system and enhancing diver safety at depth.

### SIMPLE OPERATION

- Change over valve to switch between gases without having to disconnect.
- Quick disconnect system for rapid low-pressure connection with the MCM100's open circuit bailout-out valve mouthpiece system.
- Unique Quick Connect/Disconnect coupling that allows the diver to easily connect to the XBS system with minimal force, no matter what depth they're at.

### OPERATIONAL FLEXIBILITY

- Option to have two different gas mixtures to aid decompression and improve diver safety.
- Optional low-pressure ports for additional second stage regulators.
- Cylinders can be configured for oxygen, air or mixed gas use.

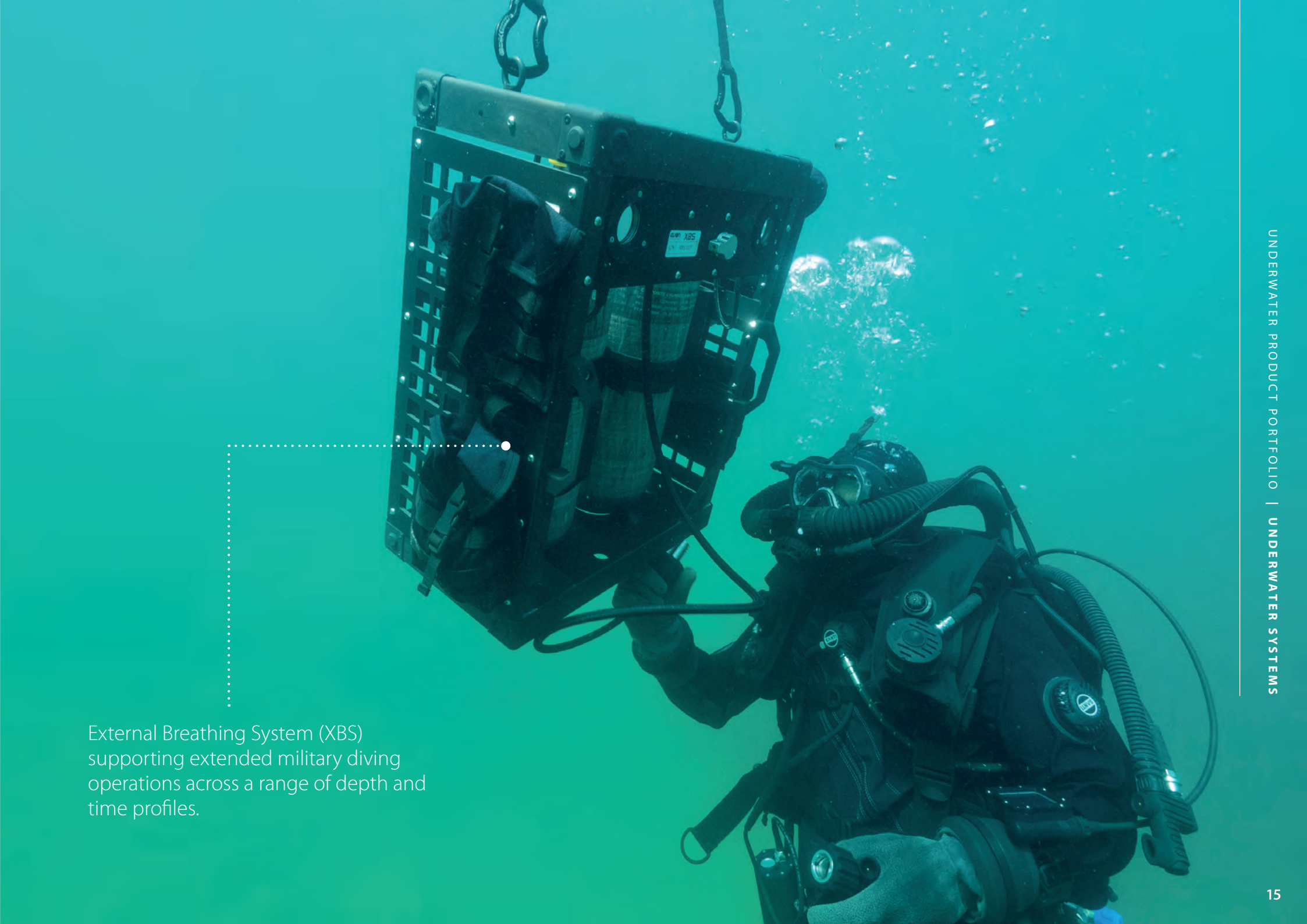
### TACTILE & ROBUST DESIGN

- Low profile matte black military finish case and high performance, robust marine grade stainless steel frame.
- Robust flight case for transport and storage.
- Large tactile valve handle for use in cold temperatures and reduced visibility.

### HIGH PRESSURE CYLINDERS

- Large independent twin 10 lt, high-pressure cylinders for extended duration.
- Individual cylinder high-pressure contents gauges.
- Pressure relief valves for automatic and manual venting of gas from depth.





External Breathing System (XBS)  
supporting extended military diving  
operations across a range of depth and  
time profiles.



# DIVER TRACKING

## REBREATHER DATA & POSITIONING SYSTEM



### MCM100 integrated SeaTrac D010 Diver Positioning System

Specifically engineered to offer advanced diver positioning and real-time rebreather data for military diving supervisors.

#### SEAMLESS SET-UP

- The D010 Diver Beacon is durable and compact, with a quick mount holster and in-built battery for seamless installation.

#### INTUITIVE TRACKING

- Intuitive Tracking Software features a visual diver position display, enabling the operator to input fully customizable geofence and depth alarms. This provides complete situational awareness should a diver stray from their intended course.

#### IMPROVED SAFETY

- Designed to be used in conjunction with the SeaTrac Base System, a single topside X150 transponder can communicate with unlimited D010 beacons within a 1000m range, delivering real-time diver location data for improved diving safety.
- Equipped with a diver distress cord, the D010 enables divers to efficiently alert surface operatives should they need emergency support.



Integrated diver tracking  
system in collaboration with  
market-leading manufacturer,  
Blueprint Subsea.





# ACCESSORIES

The MCM100 is supported by a range of available accessories. Additional enhancements can be developed with the client on request. The optional extras include:

- Alternative Decompression Algorithms
- Harness and Buoyancy Control System
- Cylinder Transport Cases
- Data Downloading Software
- 1lt Suit Inflate System
- CO<sub>2</sub> Absorbent Options
- Weights
- OTS Full Face Masks
- Buddy Heads-up Display



Weights Set (0.5kg/1kg/2kg)



Weights Set in Case



LRU Electronics System



Multi-charger



Multi-charger with Case





Full Face Mask



Half Mask



OTS Full Face Mask



LRU Spares Kit



LRU Tool Kit



Technician Tool Kit



## ACCESSORIES & PART NUMBERS



Core Intelligent Glove System



Tri-bag



5lt Bailout System



2lt Bailout System





Sidemount Regulator Set



MCM100 Transit Case

Part No.	Product
607021	LRU Tool Kit
605210	Technician Toolkit
607581	LRU Spares & Toolkit
607020	LRU Service kit
606879	Multi-Charging System
607516	Module Charger Case with electronics
604826-B	Tri-bag
605131	2L bailout System
605132	5L bailout System with QD 604225
604225	Bailout QD
604406	Ruggedized Computer
606615	Core suit
603533	2/5L Transit Case
603534	2L Transit Case
603788	1L Transit Case
601200	MCM100 - Update to include new HS etc
607573	Weights and case
603650	XBS
602916	CO2 Patch
605295	OTS FFM BOV
603542	HM
TBA	OTS FFM
TBA	Core Glove system
TBA	Support software suite
TBA	Diver Tracking System
TBA	Stage Cylinder Kit
601483	2L Diluent cylinder assembly
603756	5L Bailout cylinder assembly
604255	Quick Disconnect Plug Assembly
603729	LP Regulator Hose Bailout to QD

# TACTICAL PARTNERS

<sup>TM</sup> **SANTI**

**bp** blueprint  
subsea

**SUEX**

 **fourth element**  
MILITARY & PROFESSIONAL



# TACTICAL PARTNERS

Avon Protection are at the forefront of advanced military diving technology development. This, coupled with Avon's global network of advanced diving equipment manufacturers, provides a single source capability for equipment development, supply, specialist modifications, maintenance and training.

Whilst working with our tactical partners, we also ensure these innovations and new technologies work in real-world environments by working with the global military.

Together with our Tactical Partners, Avon Protection provide complete capability solutions for the global military diving community.

## DIVING SUITS

### **SANTI**

Dry suits, thermal garments and heating systems

### **Fourth Element**

Dry suits, thermal garments and base layers

## DIVER TRACKING & NAVIGATION

### **Blueprint Subsea**

Diver navigation and sonar systems

## DIVER PROPULSION

### **SUEX**

Small diver propulsion vehicles (DPVs)

## DIVING MASKS & COMMS

### **Ocean Technology Systems**

Underwater communication and full face masks

### **Kirby Morgan**

Full face masks

# OTHER MARITIME-RELATED PRODUCTS





## MI-TIC S™

### DAMAGE CONTROL

A premium lightweight thermal imaging camera optimized for naval damage control teams and on-board use.

High-performance components deliver a dynamic range, increased resistance to high temperatures, fully-sealed buttons and a protected thermal sensor, all ensure it is unrivaled in maritime protection.



## MP-PAPR™

### MARITIME CT

A compact and easily integrated PAPR unit providing cooling, lower-use burden and reduced pulmonary stress.

This is the world's first flexible PAPR unit, constructed from the same field-proven Chlorobutyl rubber as Avon's 50 series mask range.

The unique shape and construction allow the wearer to mount the PAPR in multiple ways, maximizing integration while delivering higher protection levels.



## CS-PAPR™

### BOARDING OPERATIONS

The newest generation of CBRN Powered Air Purifying Respirator (PAPR) providing safer operation and increased duration on target.

Designed for use with Combination Unit Respirators (CURs), the CS-PAPR allows the user to select the level of protection dependent on the threat.

The wearer can seamlessly switch between APR, PAPR, and SCBA modes and the modular methodology allows the user to add it to other existing fielded systems.



## ST54™

### BOARDING OPERATIONS

A revolutionary multi-role system developed specifically for specialist applications where the user needs to respond to changing operational conditions.

Boarding an unknown vessel is one of the most hazardous missions and the ST54 helps to mitigate these dangers.

The ST54 combine the FM54 mask with innovative modular breathing apparatus technology to provide positive pressure SCBA and/or PAPR capability.

# QUALITY ASSURANCE



# Quality Assurance

Avon Protection's expertise is underpinned by internationally recognized product, manufacturing and environmental certifications.

## Manufacturing Excellence

At the heart of Avon Protection's innovation, design and engineering is our manufacturing processes and the associated quality control procedures. Avon Protection has been audited and accredited to ISO9001 standards, with quality management, configuration control and supply chain management defined as part of our Global Quality Management System (GQMS).

GQMS procedures have been in place since 1992, ensuring that we can deliver and maintain the highest level of manufacturing quality, from the first unit to the last.

## Manufacturing Accreditation and Compliance

- Quality Management System to ISO9001 Latest Standards
- Configuration Management to DEF STAN 05-57
- Environmental Management System to ISO14001 Latest Standards







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[avon-protection.com/contact](https://avon-protection.com/contact)