



IS-MIX
**A DEMAND-
CONTROLLED
SEMI-CLOSED
BREATHING
SYSTEM**

FOR MINE CLEARANCE OPERATIONS

INTERSPIRO

IS-MIX

The complete mine clearance diving system

IS-MIX is a completely new semi-closed rebreather from Interspiro based on the well-proven concept of ACSC and DCSC systems which have been in operation for over 30 years and have an excellent track record. These forerunners have been used under active service conditions to 150 meters and in simulator conditions to 450 meters.

General

The IS-MIX is extremely simple and fast to prepare and operate. The breathing work is minimal due to large diameter hoses and hydrostatic balanced breathing bellows. The set is neutral in water giving ease and exactness in diving procedures. Maintenance costs are very low and most service can be made with little or no tools. The field test equipment is easy to operate and the documentation is precise and easy to follow.

Apart from excellent magnetic signatures and acoustic qualities, the safety aspect has been given high priority. An active breathing warning device, a manually operated by-pass function, an automatic buoyancy control valve, and separate harness life jacket systems ensure comfortable handling and increased diving safety.

IS-MIX is a mechanical system, that is simple and easy to use. The mechanical dosage system keeps the fraction (%) of oxygen (O_2) constant in the breathing circuit. This is completely independent of the diving depth and the divers' ventilation. The 60 meter design is based on only two gas mixtures to be used for diving down to 60 meters. This simplifies gas logistics with regard to charging, storing and preparation. The 90 meter design is based on additional components such as the Interspiro DP1 (DPX) high pressure hose system and stage bottles supplying the set with gas for deep dives with long duration.

The complete IS-MIX can be used with a multitude of components to suit any security or operational standards.

Main Components

Gas cylinders for gas mixture, with mixes appropriate for various diving depths. These cylinders use the benefits of the Divator Lite carbon fiber-wrapped cylinders but in a non-magnetic version.

Control unit is composed of:

- Dosage volume selector for different gas mixtures and depths.
- Dosage regulator and warning system.
- Hydrostatic valve.
- By-pass valve.
- Reserve gas valve.
- Pressure gauge.

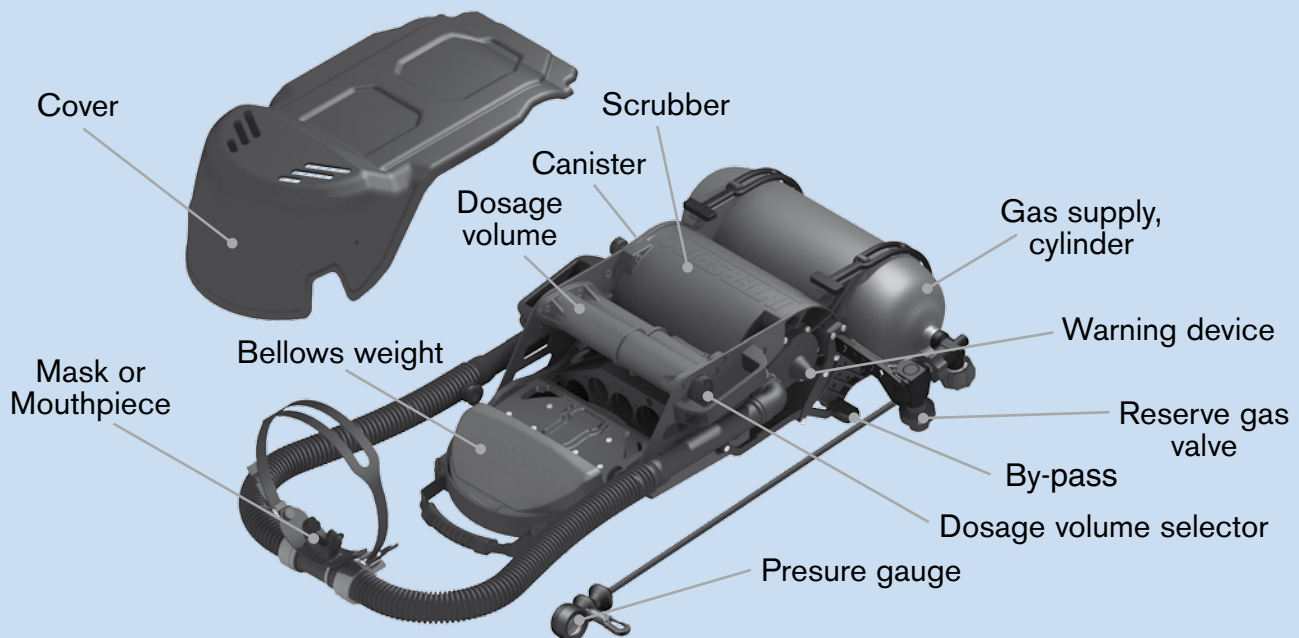
Breathing circuit is composed of:

- Absorber housing with absorber canister.
- Breathing bellows that measure the current breathing volume of the diver and dose out the correct amount of fresh gas into the breathing circuit.
- Gas diffuser to significantly reduce the acoustic noise.
- Full face mask or a mouth piece with hoses.

Carrying BC (vest) contains:

- Emergency life vest.
- 1 litre carbon fiber composite 300 bar cylinder for dry suit inflation.
- Hose with regulator for dry suit and BC (vest) inflation.
- 1 litre carbon fiber composite 300 bar cylinder for emergency vest inflation.
- Hose for emergency vest inflation.





Gas Mixtures

Interspiro-suggested gas mixtures are:

- Red Nitrox mixture to 30 meters
- Green Nitrox mixture to 60 meters
- Brown Trimix mixture to 90 meters

The percentage of Oxygen is constant, independent of diving depth and the diver's ventilation. PO_2 variations are within accepted limits and optimized for minimum decompression time.

All other Nitrox gas mixtures can also be used in the IS-MIX in combination with recalculation of the equivalent air depth (EAD).

Magnetic and Acoustic Signature

Low magnetic and acoustic signature is an essential element in the design of mine clearance apparatus and the IS-MIX can be delivered to the customer's specification.

Overall Characteristics

Dimensions:

- Length – 620 mm
- Width – 550 mm
- Height – 250 mm

Weights:

- A complete, filled IS-MIX breathing set – 35 kg
- Carrying frame, vest and two filled cylinders – 9 kg

CO₂ Absorbent:

- Soda Lime NSN 6505-99-541-3854 CS2580D, Grade D

Volumes:

- Breathing bellows – 4.5 litres
- Absorber unit – 2.6 litres
- Gas cylinder – 5.0 litres at 200 or 300 bar
- Dry suit and BC (vest) air inflation cylinder – 1.0 litres at 200 or 300 bar.

Features

- Pitch and roll neutral buoyancy.
- Minimised hydrodynamic drag.
- Corrosion resistant materials.
- High reliability and high operational availability.
- Simple and fast to maintain and operate in the field.
- Built-in warning system for low breathing gas supply.
- Built-in warning system for malfunction of the gas dosing system.
- Manual by-pass lever (valve).
- Removable bellows weight.
- Automatic buoyancy control via a hydrostatic valve.
- Full face mask accepts most diving communication systems.
- Full face mask gives the diver excellent vision and breathing with both mouth and nose.
- Full face mask moisturises the dry breathing gas, giving the diver better comfort on long missions.
- Can quickly be made ready for immediate use.
- Can be used even after a prolonged period at full readiness.
- Carrying frame with harness can be put on well in advance before the dive without causing back pain.
- Includes a small tool and test kit.
- Allows for simple pre-dive checks without the need for special tools.
- Can be stored fully prepared in its cover (shell) for immediate use.
- Two units can be stacked on top of each other.
- Surface supply and/or bailout cylinders can be incorporated as secondary (emergency) breathing system if necessary.



Interspiro has 70 years of experience as a ground-breaking innovator of respiratory protection for non-breathable environments.

We develop, manufacture and market respiratory and auxiliary equipment for firefighting, work in hazardous environments and professional diving. Our breathing apparatus has an outstanding reputation for reliability and performance. This is accomplished through innovative technical solutions and by applying the highest standards of quality to all parts of the value chain. Our innovation pedigree includes many technological milestones now considered to be standards in the industry.

Interspiro is a supplier of respiratory protection to defence military organisations, fire and rescue services, industries, utilities, shipping, offshore and diving companies all around the world.

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