

Case study

WITT Gas Mixer in operation aboard the Mermaid Endurer Trust at Depth

Diving operations at several hundred meters below sea level are among the most demanding industrial activities in the world. Where humans live and work under pressure for weeks at a time, absolute safety is non-negotiable – and economic efficiency becomes just as critical. On board the Mermaid Endurer, a specialized diving support vessel, a gas mixer from WITT-Gasetechnik delivers both: The MG100-2ME GB A Heliox model precisely blends Heliox breathing gas – vital for divers, and a technically and economically sound solution for the operator.

High Pressure Below – Why Heliox Is Essential

In deep-sea environments, ambient pressure increases dramatically. At depths of 300 meters, over 30 bar of pressure acts on the human body. Under such conditions, normal breathing air becomes dangerous: Oxygen levels must be drastically reduced to avoid toxicity, and nitrogen is replaced with helium to prevent narcosis. Heliox – a mixture of helium and oxygen – is therefore standard in professional saturation diving.

The exact oxygen concentration depends on the working depth – in extreme cases, as little as 2% O₂ is required. Onboard the Mermaid Endurer, this adjustment is made using a purpose-built WITT gas mixer with integrated gas analysis – fully automated, reliable, and continuously monitored. It's a critical safety measure for divers working and living in pressurized chambers for extended periods.

Safety Requires Service – Wherever It's Needed

The MG100-2ME GB A Heliox mixer is designed for these extreme conditions. The system recently underwent extensive maintenance. The service was carried out by an experienced Vivangas technician as part of the worldwide WITT service network. The work included replacement of key components, recalibration of the system, and thorough testing of all functions and seals – carried out under realistic conditions.



For the operator, this means maximum reliability in day-to-day operations. WITT supports its technology with a global network of highly qualified service experts – even for highly specialized applications far from standard industry environments. When lives depend on equipment, there's no margin for error.

Economic Advantage – Through Onboard Mixing

Beyond the safety-critical function, the gas mixer delivers clear economic benefits. Ready-mixed Heliox gases are expensive – and often too inflexible for changing dive depths. With a WITT gas mixer on board, operators can create precise mixtures as needed – saving up to six figures annually in an application like the Mermaid. Logistics are also simplified: fewer gas types need to be stored, reducing space requirements and increasing autonomy. It's a smarter, more efficient way to manage vital resources at sea.



Technology for Extreme Demands

The technical and operational challenges in saturation diving are exceptional. The deployment of the WITT gas mixer aboard the Mermaid Endurer demonstrates how precision, safety, and cost efficiency can go hand in hand – even in the most demanding environments. WITT gas mixers prove their value worldwide – whether in the depths of the ocean or in other sensitive industrial processes. With decades of experience, modular systems, and global service support, WITT provides solutions professionals can rely on – especially where failure is not an option.

