

News from CompAir

COMPAIR'S TURBOSCREW COMPRESSORS ARE THE DRIVING FORCE BEHIND MARINE PROTECTION

C210-TS and C190-TS Compressors Protect Marine Life During Pile Driving in the North Sea

Nine CompAir TurboScrew compressors, hired by hydraulic engineers Hydrotechnik Lübeck GmbH (Hydrotechnik), have ensured that a project to construct the foundations for Germany's third marine research platform in the North Sea has been completed on time, whilst minimising the impact on the marine environment – and saving more than 2,000 litres of fuel.

Called FIN03, the research platform is being constructed for the research and development centre of Kiel University of Applied Sciences, just off the North Sea coast of Schleswig-Holstein in northern Germany.

Underwater pile driving produces sound waves that are transmitted at a speed of around 1500 metres per second which can have a harmful affect on fish and marine mammals, even some distance away. To help minimise the environmental impact, CompAir distributor, Peter Gay in Bremen supplied nine portable compressors including C 210TS-12 and C 190TS-12 models, which were used to create a curtain of vertical air bubbles around the site to absorb and reflect the sound waves.

"It was a real challenge to complete a project of this scale in the time available," says Cay Grunau from Hydrotechnik. "It took over six hours to drive the 315-tonne, 55-metre-long monopile around 30 metres down into the seabed. This meant that the CompAir compressors ran continuously for around 20 hours, but, because of their high fuel efficiency, we were still able to save about 2000 litres of fuel on this particular project compared with similar compressors.

To create the bubble curtain, pipes fitted with specially-designed nozzles were laid in a 70-metre radius around the foundation position and the compressors optimised to produce a volume flow of around 180m³/min.

Continues...

It was important to create such a large radius because of the effect of potential strong North Sea currents, to ensure that the bubble curtain continued to function effectively throughout the entire pile driving operation; from the seabed at a depth of 23 m up to the water's surface.

In addition, to ensure that there was sufficient power, even under the water where the pressure is already 2.3 bar the team used CompAir machines with an operating pressure of 12 bar.

Measurements made during the pile driving showed that the barrier of air bubbles actually reduced noise emissions more than the research institute originally anticipated. As a result, the impact on marine life was lessened significantly.

About CompAir's TurboScrew Compressor

The technology used in CompAir's TurboScrew series offers a high standard of energy efficiency and reliability, thanks to the QSB 6.7 motor, developed by CompAir in collaboration with Cummins. Using bi-turbo technology, CompAir TurboScrew drive units offer excellent fuel consumption.

This is due partly to the use of a second exhaust gas turbocharger that pre-compresses the intake air for the screw compressor stage. The patented machine concept increases the efficiency of the compressor system significantly, especially in day-to-day part-load operations. A CompAir compressor uses up to 30% less diesel fuel to achieve the same reduction in volume flow than all other comparable compressors on the market. This technology also makes the machines the lightest in their class.

About FINO3 – Research for Offshore Projects

Unlike the exploitation of wind energy in other European countries, Germany's only wind farm potential lies far offshore in deep water. So far, no country in the world has experience in building offshore wind farms under these conditions.

The aim of the FINO3 project is to minimise the risks that still exist and advance the construction of the planned offshore wind farms.

Continues...

The platform's main job is to accommodate seven research and technology projects operated by various universities and private enterprises. Small and medium-sized enterprises, universities and research institutes will be given the opportunity to carry out individual research, development and testing projects in an offshore environment.

-Ends-