QUEEN MARY 2 ENHANCES RELIABILITY WITH NEW COMPRESSED AIR SYSTEM

The Queen Mary 2, one of the world's most iconic ocean liners, has taken its engineering excellence to the next level with a new compressed air system supplied and installed by one of BOGE's Platinum Partners, Southern Air Systems. The updated setup, which includes four water-cooled compressors and three refrigerant dryers, has replaced aging equipment to deliver a more reliable and efficient air supply to support the ship's essential operations.

At the heart of the new system are four 37kw BOGE S50-3 690V water-cooled compressors and three DT80-2 refrigerant dryers, ensuring top-tier performance in demanding onboard conditions. The new system is not only more compact but also more efficient, providing plenty of spare capacity for future requirements.

The Need for a New System
The Queen Mary 2 relies on compressed air for various critical operations, from automation in engine rooms to powering control systems throughout the ship. However, the ship's existing compressors, four 37kw none-BOGE Screw compressors, built in 2001, had reached the end of their lifecycle despite several component replacements over the years.

Two key challenges highlighted the urgency for a new system:

1. The old compressors struggled to maintain steady performance in the high ambient temperatures within the ship's lower decks.
2. Their age and inefficiency were causing maintenance headaches and increasing the risk of system failure.

Unique Installation Challenges
Installing the new compressors onboard presented a set of unique challenges due to the ship's layout. The outdated compressors had to be disassembled into smaller components to be removed from the lower decks. Similarly, the new BOGE S50-3 units were partially dismantled to be lowered through hatchways two decks below.

PROJECT REPORT

CUSTOMER
The Queen Mary 2 is one of the world's most famous ocean liners, known for its luxury and engineering excellence. The ship depends on reliable compressed air to power critical systems essential for safe and smooth operations at sea.

THE CHALLENGE
The ship's aging compressors, installed in 2001, struggled in the lower deck's high ambient temperatures. Their inefficiency caused frequent maintenance issues and posed a risk of costly downtime across vital onboard systems.

THE BOGE SOLUTION
Southern Air Systems supplied and installed four BOGE S50-3 water-cooled compressors and three DT80-2 dryers. The compact, efficient system ensures reliable compressed air supply, smooth integration, and spare capacity for the future.

BOGE PRODUCTS IN USE

- 4 x S50-3 water cooled compressors
- 3 x DT Refrigerant Dryers

The equipment was then carefully maneuvered through the engine room and reassembled in its final location. Additionally, all compressors needed to integrate with the engine control room for run and fault signal communication. Thanks to the BOGE Focus controller, this was seamlessly achieved.

Kev Foley, Director of Southern Air Systems, commented: "This was a great project to work on. The complexities of installing the compressors on a ship required detailed planning, but our team delivered the installation in two stages with precision. Everyone is happy with the outcome, and it's been a fantastic success."

Why Water-Cooled Compressors?
Water-cooled compressors were the clear choice for the Queen Mary 2 due to the high ambient temperatures in the lower areas of the ship. Unlike air-cooled compressors, which might struggle to maintain a stable operating temperature in such conditions, water-cooled units dissipate heat more effectively. This ensures consistent performance and minimises the risk of overheating.

Results and Benefits
The installation, completed by Southern Air Systems, has provided significant benefits, including:

- A more reliable air system, ensuring no interruptions to essential operations.
- Compact design, allowing the compressors to fit seamlessly into the engine room.
- Energy efficiency, reducing operational costs and environmental impact.
- Easy maintenance, thanks to the advanced design of BOGE's equipment.

The new system's additional capacity means the Queen Mary 2 is well-prepared for future operational expansions.

A Smooth Sailing Future - Since the installation, the compressed air system has exceeded expectations. The Queen Mary 2 now enjoys a dependable supply of high-quality compressed air, ensuring smooth operations across the ship. With a system designed for both reliability and efficiency, the luxury liner is set to continue its transatlantic crossings with confidence.