

Maximizing Plant Efficiency: Major Compressor Overhaul in LDPE Production

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In the intricate world of low-density polyethylene (LDPE) production, operational efficiency is a dominant concern. For a Scandinavian chemical company specializing in this essential polymer, the aging condition of its critical equipment posed a significant challenge. The company's two LDPE production lines relied heavily on a 45-year-old Hyper compressor and a booster/primary compressor, which were both in urgent need of an extensive overhaul to maintain production capacity and efficiency.

The core of LDPE Production

At the heart of the challenge were two compressors: a Burckhardt Compression F8 Hyper compressor, operating at 7,500 kW (10,000 hp), and a third-party booster/primary compressor. These units were integral to the plant's operation, responsible for critical stages in LDPE processing.

The Hyper compressor's role in high processing of ethylene was essential for efficient polymer production, while the booster/primary compressor, operating at 1,650 kW (2,200 hp) with a discharge pressure up to 250 bara (3,625 psia), was vital in preparing ethylene gas for polymerization. The wear and age of these compressors had led to diminished performance, risking operational delays and the customer's reputation in the highly competitive chemical industry.

After discussing the challenge with the chemical company, Burckhardt Compression, known for its depth of expertise and innovative solutions, stepped in. Its approach began with meticulous planning and coordination, ensuring a comprehensive understanding of the project's intricacies. Notably, Burckhardt Compression undertook reverse engineering for multiple third-party compressor parts, demonstrating its adaptability and technical prowess.

A specialized team, including field experts and supervisors, was deployed, operating in a two-shift system for maximum efficiency. The overhaul, a testament to Burckhardt Compression's accuracy, involved the complete removal and precise reinstallation of the compressors, executed within a specially erected on-site tent to ensure optimal machining conditions.

Sustainable practices and seamless collaboration

Reflecting Burckhardt Compression's commitment to sustainable practices, the overhaul was conducted with the aims of long-term operational stability and minimal environmental impact. This approach not only addressed the immediate challenge but also reinforced the plant's efficiency and reliability for years to come.

The project's success was a result of seamless collaboration between Burckhardt Compression's global network of experts and the customer, ensuring a solution perfectly tailored to the specific needs of the LDPE plant.

The plant manager commented, "Burckhardt Compression's understanding of our unique requirements and its swift, expert response were instrumental in this project's success. Its ability to provide a customized, efficient solution within our tight timeframe was exemplary. This level of service and expertise is what makes them a trusted partner in our operations."

This successful overhaul by Burckhardt Compression illustrates its ability to blend technical expertise, innovative solutions and sustainability goals when addressing complex challenges in industrial settings.

Image captions:

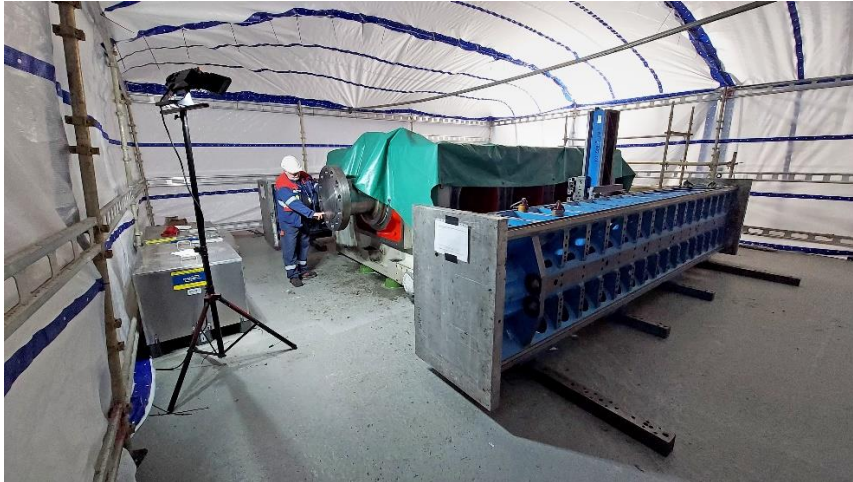


Image 1: Installation, levelling & measurement of both crankcases were done in separate tent.

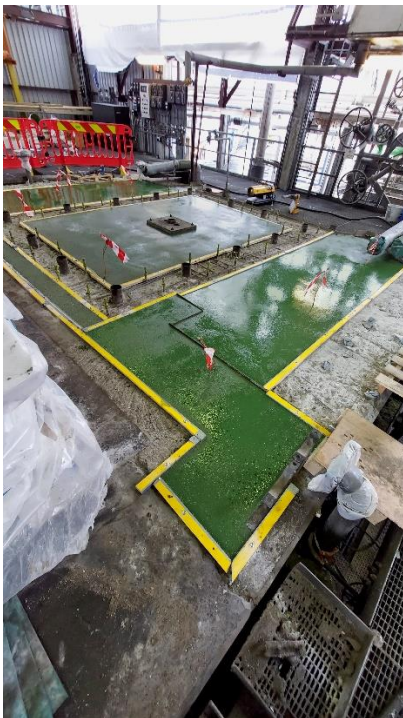


Image 2: Hyper Compressor foundation after repair.

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Burckhardt Compression is the worldwide market leader for reciprocating compressor systems and the only manufacturer and service provider that covers a full range of reciprocating compressor technologies and services. Its customized compressor systems are used in the gas gathering and processing, gas transport and storage, refinery, chemical, petrochemical as well as in the industrial gas and hydrogen mobility and energy sectors. Burckhardt Compression's leading technology, broad portfolio of compressor components and the full range of services help customers around the world to find the optimized solution for their reciprocating compressor systems. Since 1844, its highly skilled workforce has crafted superior solutions and set the benchmark in the gas compression industry.

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