

# Success Story: BC ACTIVATE enhances MTBO and reveals energy savings potential

Safety and  
sustainability



Syngenta Crop Protection AG, close to Basel, Switzerland, aims to revolutionize agriculture through customized solutions for farmers, society, and the environment. Their offerings span seeds, crop protection, and nutrition products. At the Kaisten site, several non-Burckhardt Compression, dry-running, 2-stage piston compressors for explosive gas are operated. These units experienced recurring issues, leading to downtime of the machines and high gas temperatures. The frequent breakdowns of the piston compressors and lengthy repairs strained resources and compromised reliability by limiting redundancy for significant periods.

Syngenta was looking for a technically solid solution to increase the MTBO (mean time between overhaul). Burckhardt Compression intervened, leveraging our BC ACTIVATE compressor assessment program. Through this comprehensive survey, we pinpointed the issues and proposed technical improvements for modernizing these machines.

## Customer challenges

- Wear on the piston rings and piston rod packings occurred much faster than expected
- Lack of cylinder liners resulting in direct contact between pistons and cylinders causing irrevocable damages to the running surfaces
- High compression ratio and therefore high gas temperatures

## Burckhardt Compression solution

### BC ACTIVATE survey

The survey was conducted to identify bad actors and the root causes of inefficiencies within the system.

### Performance improvement

Comprehensive inspection and measurement of all internal components were performed to offer engineered solutions.

### Genuine spare parts

All improvements were implemented based on the results of BC ACTIVATE. We replaced all packings, intermediate packings, oil scrapers, casings, and pistons, including piston rods of the first stages of all compressors.



### Reverse engineering

Repair and retrofitting processes were implemented for damaged components, which included re-engineering to meet current operational demands.

### Highest quality

All parts were produced in-house to the highest quality standards, ensuring superior performance and reliability.

### Improved efficiency

Following a year of successful operation, cylinder liners were introduced to minimize maintenance efforts.

### Expert staff

We provided engineering services staffed with experts to oversee the optimization process.

### Customer benefits

- Gas outlet temperatures have dropped by 10° to 15° Celsius
- Average lifetime of the sealing elements has been quadrupled
- Highest quality components with warranty
- Completely modernized compressors
- Improved operational reliability and easier maintenance
- Return on investment in less than two years
- Efficiency substantially improved



BC ACTIVATE compressor assessment to reveal improvement potential.



Expert staff to execute improvements.

"Burckhardt Compression's systematic approach to analyzing our problem with BC ACTIVATE regarding reliability of the piston compressors proved very effective. Their approach pinpointed root causes and generated actionable solutions. This process eliminated several problems, resulting in tangible improvements, substantially reducing downtime of the machines, and a decrease of discharge temperature by 10-15° C. Working with Burckhardt Compression showed clear benefits in improving our compressors. We're continuing to work with Burckhardt Compression to maintain or further improve our compressors, building on the initial success."

**Roger Zwissler**

Site Engineering Manager, Syngenta Crop Protection AG, Kaisten, Switzerland

### Burckhardt Compression AG

24/7 Emergency Hotline: +41 52 261 53 53  
aftersales@burckhardtcompression.com  
www.burckhardtcompression.com