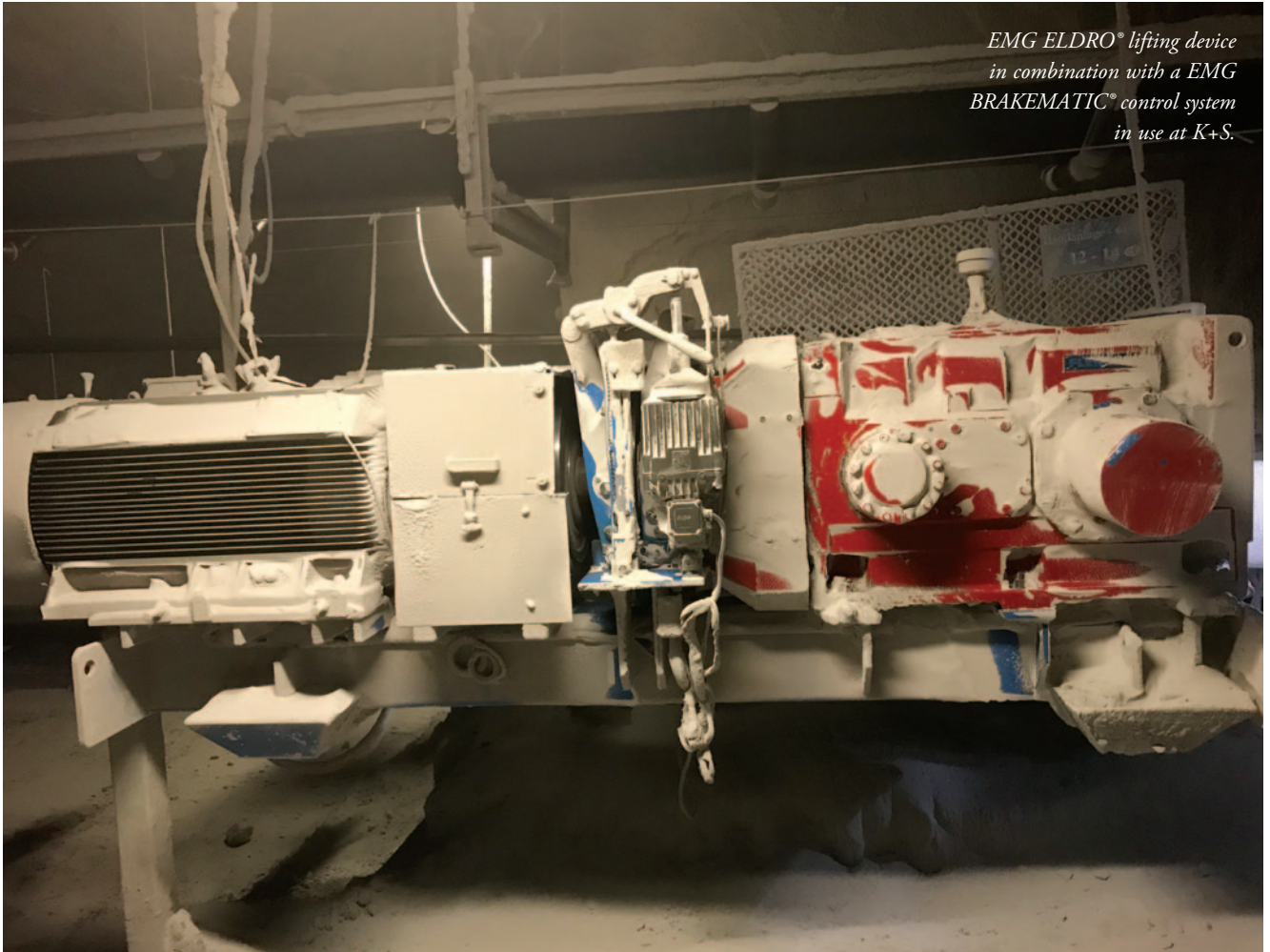


BRAKEMATIC® advance for conveyor belts at K+S Minerals and Agriculture GmbH



*EMG ELDRO® lifting device
in combination with a EMG
BRAKEMATIC® control system
in use at K+S.*

K+S Minerals and Agriculture GmbH, based in Kassel, is a German mining company with a focus on potash and salt extraction. K+S is one of the largest salt producers in the world and belongs to the top group of international suppliers of potash and magnesium-containing products for agricultural and industrial applications.

K+S is mainly active in Europe and North America and employs more than 14,800 people worldwide. K+S Minerals and Agriculture GmbH has been a loyal EMG customer for many years. That's why K+S turned directly to EMG Automation GmbH with a new major challenge. K+S needs a system that can ensure controlled braking on all conveyor belts. The customer's wish is controlled braking processes within ten seconds, regardless of the load and inclination of the individual conveyor belts. Only EMG's BRAKEMATIC® advance system was suitable for such a requirement. In order to be able to better assess the conditions and requirements on site, EMG has therefore installed a prototype of its BRAKEMATIC® advance solution at K+S on the 'east axis'

500m underground. The conveyor belt there is 956m long and has an inclination or height difference of 65m. It has a flow rate of 1,800 tonnes per hour and a conveying speed of 3.5m/s, powered by 6kV drive. This system represents an enormous challenge for the controlled brake. EMG also has to take into account supply voltage instability of +15% (500 VAC 50Hz). In addition, the belts run differently under incline or inclination, which results in different braking times (without control).

EMG BRAKEMATIC® ADVANCE

BRAKEMATIC® advance is an electronic control system with variable parameters for generating controlled braking torque curves. The actual speed of the conveyor belt is recorded with a speed sensor and compared with the specification, e.g. ten seconds. An EMG controller then calculates the difference between ACTUAL and TARGET in real time, corrects the braking force by means of a frequency converter and the EMG ELDRO® thruster lifting device and thus regulates the braking process.

CONSTANT BRAKING TIMES FOR CONVEYOR SYSTEMS

Reliable compliance with braking time specifications is the first prerequisite for implementing a departure regime for complex conveyor belt systems. This is the only way to ensure protection against spills by asynchronously switching off the belts. The EMG BRAKEMATIC® advance application is ideally suited for this application. It realizes predetermined braking times regardless of the conveying direction (ascending or descending) and load condition.

The project at K+S was initiated by the EMG Safety Components for Heavy-duty Logistic business unit and actively supported by the EMG Metals and Service business units during implementation: project planning, control cabinet construction, programming, parameterization and subsequent commissioning were solved jointly in co-operation between the two EMG business units.

EMG looks forward to continuing to solve conveyor problems in a trusting co-operation with its customer K+S Minerals and Agriculture GmbH.