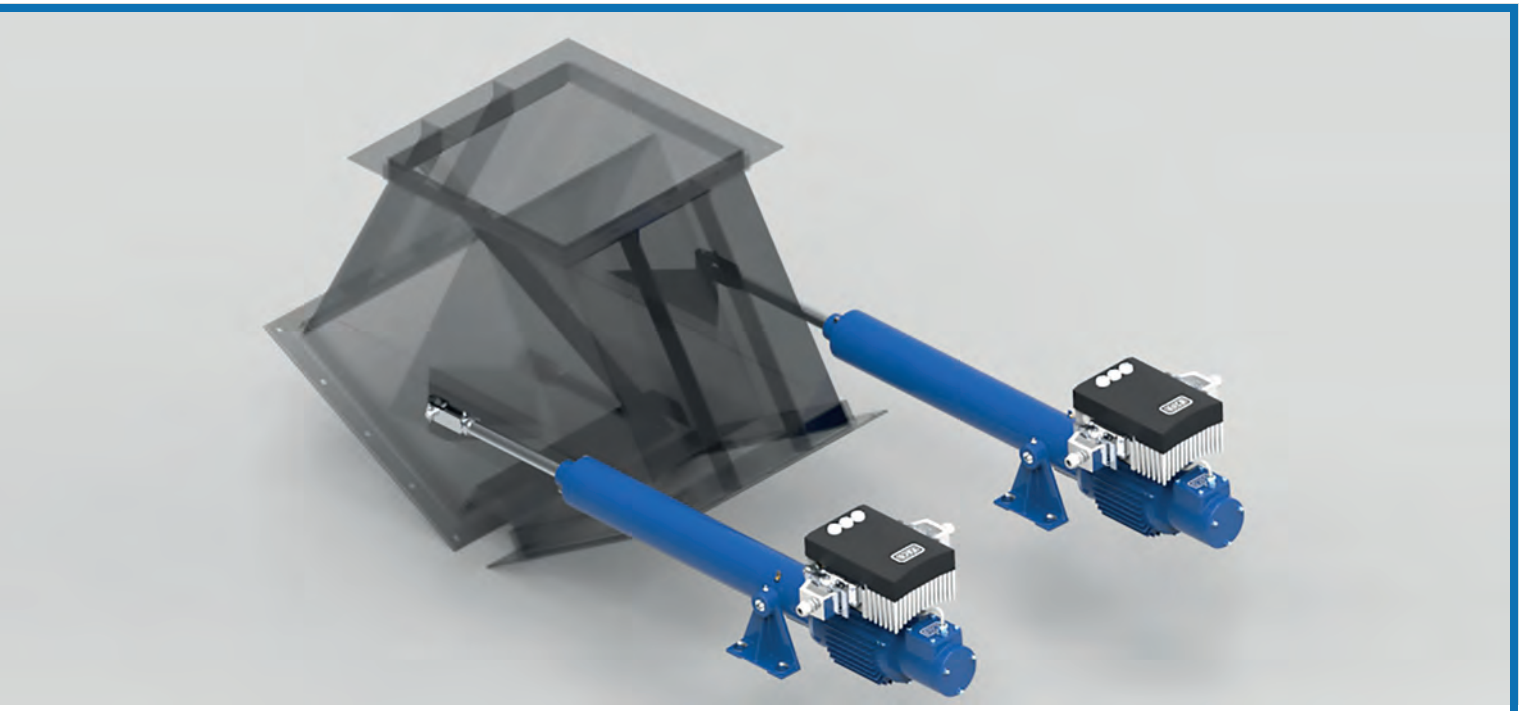
RACO electric actuators

BULK-MATERIAL HANDLING
BULK-MATERIAL SPLITTER CHUTE



RACO electric actuators application in bulk-material technology -
Adjustment of a bulk-material flow splitter chute via two electric actuators with synchronisation control

Due to their rugged construction design, RACO´s Heavy Duty electric actuators are used as reliable mechatronic drives for the most varied adjusting motions in bulk-material technology. Both the actuation of flaps and chutes, as well as the exact positioning of bulk-material splitter chutes, are managed by electric actuators, which are easily to install and autonomously controllable as a field device. In cases of large-scale bulk-material splitter chutes with a risk of a tilting splitting prism, two RACO electric actuators are used in synchronisation by using the RACOmatic®.

Different configurations of the RACOmatic® also enable force-controlled movement for chain tensioners and belt scrapers. RACOmatic® system solutions including RACO´s Micro-PLC allow operating and controlling several electric actuators in a network.

About the project:

The Sukari Gold Mine in Egypt was extended by a huge splitter chute which is more than 300 m away from the main system. The long distance required a decentralised control activation of the drives for the splitter chute.
High ambient temperatures of up to +55°C required the use of reliable and failure-proof components.
The RACOmatic® combined with RACO´s Heavy Duty electric actuators, was implemented as a perfect system solution.

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Considering the requirements of the application, the switch cabinet for the frequency converters and micro-PLC was equipped with an air conditioning system. RACO´s Micro-PLC has a full-text display (HMI), which offers the possibility to control each electric actuator separately over the mode "Local control". The "Electronic Hand Wheel"-mode proved to be very useful during installation and commissioning particularly when it comes to drive the electric actuators separately into their initial start positions for synchronization.

Both, the programming for synchronous run of two electric actuators by a vector-controlled frequency inverter and the integrated Electronic Position Sensor EPS are proprietary developments of RACO.

Parameters, such as speed, deceleration ramps for a smooth travel to set point position, as well as limit values for force and speed, are stored and controlled inside the RACOmatic®. All Parameters secured by password level, offering full protection against accidental misuse or improper operation. Only two digital signals are required from the higher-level control for starting and stopping the movement.

RACO electric actuators feature screw designs which together with a special guiding technology ensure a steady support of the thrust tube, even when fully extended. The front cap is equipped with a special double sealing to protect the inside of the actuator against dirt particles. An additional ice and dirt wiper scrapes of ice and other solid contaminants. A patented spring-loaded nut housing protects the screw nut against axial impact loads. Only RACO electric actuators offer this patented, spring-loaded nut housing technology.

The following aspects should be considered for this project:

- Electric actuators despite defy all adverse ambient conditions; in particular temperature and vibrations
- Exact positioning of the distribution prism with two electric cylinders in synchronisation mode via RACOmatic®, as well as monitoring of the operating parameters (acceleration, speed, force, position)
- System solution from a single source, for simple integration into the entire system

Would you like to find out more about our products? We would be glad to advise you!

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