

COAL MINE REDUCES MAINTENANCE COSTS

CASE STUDY: COAL MINE, USA

The owner of the deepest coal mine in the U.S. faced lengthy and costly dilemmas for two key applications:

INITIAL SITUATION

Firstly, the bolts for "Mining Heads", used to channel through rock and extract the coal from the underground mine, had to be removed and re-tightened during maintenance. Being the deepest coal mine in the US, 5 miles deep, bringing these Mining Heads out of the mine each time for service was not economical and would create too much down time. It would take 4 days to bring the Mining Heads to the surface and back.

For underground coal mining torque multipliers and wrenches with rare maintenance are essential.

The other key maintenance application challenge was servicing the conveyor systems underground. The conveyors are used to carry the coal out of the mines. These conveyors can take up to 7 years to build and can expand over 10 miles. The rollers and expansions pieces of the conveyor system have to be serviced frequently.

Therefore, a heavy-duty tool that would not cause costly maintenance processes had been required. The maintenance staff had been using impact wrenches for both applications, but the tools were not ergonomically friendly to the operators and required a high maintenance budget. The Impact wrenches are destructive by nature with its "hammering" design.

SOLUTION

They tried a hydraulic wrench, but the bulky compressor and laborious operation for the tool didn't fit the requirements. The hydraulic tool operates through a hydraulic ram that extends and retracts. It was a long and tedious process. The tool was heavy and took too long to set up and operate.

The user-friendly pneumatic torque multiplier CLD by alkitronic meets the special requirements of coal mining.

The foreman tested the alkitronic CLD pneumatic torque multiplier. The torque multiplier was ergonomically safer and it eliminated the frequent costly repairs of the impact wrenches. The torque multiplier also increased the speed and productivity for the maintenance applications, as it was faster than the hydraulic wrench.



Figure 1: Coal mining

The CLD eliminated the cumbersome set up time and slow ratcheting process of hydraulic wrenches.

The alkitronic torque multipliers have a lot of advantages.

Alkitronic torque multipliers provide precision torque control. That makes maintenance easier and safer. At the same time, application problems and tool costs can be reduced.



Figure 2: Pneumatic torque multiplier CLD by alkitronic

TECHNICAL DATA OF THE CLD/L

- ✓ Simple 1-finger operation for right/left rotation, optional facility to enable the reaction to be locked in one position
- ✓ Robust motor housing from cast aluminium with proven pneumatic drive
- ✓ Proven high-performance gears, produced in a chip-free high-precision process to produce high loads with low wear
- ✓ On demand with optional silencer levels to reduce the noise from the motor exhaust