

A Case Study for Yongning Coal Mine

Armstrong **Industrial** installed its integrated fluid supply system at the Dongtai Group's Yongning underground coal mine.

This solution includes an emulsion system with three of Armstrong's S500 pumps equipped with variable frequency drive (VFD), two tanks and one off-tank controller – as well as a water system with two S300 pumps, one tank and one off-tank controller. Armstrong **Industrial** also supplied the control system in conjunction with water treatment equipment and a filtration system.



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Background

The Dongtai Group is the largest private company (by revenue) in Lüliang city of Shanxi province. It operates four coal mines, which are focused on the production of coking coal. The company also owns a cable manufactory plant, hotels and residential buildings.

Project objectives

The project was to supply the Yongning mine with a fully automated pumping solution, with an emulsion system to deliver hydraulic fluid power to the critical mine roof support equipment, and a water system for suppressing coal dust.

The solution included an intelligent pump system that would support Yongming mine's fully mechanised working face.

Armstrong **Industrial** designed, manufactured and supplied an outby system to be located 1000 metres from the coal face; it was successfully commissioned to start coal production by end of October.

Challenges

In its dealings with Armstrong **Industrial**, the customer prioritised their need for a pump solution that would deliver high levels of reliability. At the same time, the system was to operate cost-effectively over its life cycle. In addition, the system was required within a tight project schedule, and Armstrong was able to ensure supply within two months of the project order.

Armstrong Industrial's approach and solution

Our systems for longwall mining – including pump stations and controls – ensure uninterrupted hydraulic power for actuation of self-advancing roof supports. Integrated design and innovative variable speed technology allow energy savings and lower operating costs. Intelligent control technology overcomes system lags and optimises the speed of continual shearing – for better productivity, availability and uptime.

Active Performance Management to give customers long-term efficiency in our pumping systems. This facilitates the flow of data that allows the mechanical system to respond to changes in load and system performance.

Our sophisticated control systems optimise performance so that mines can achieve the same hydraulic fluid power with fewer pump systems – allowing a lower installed cost of equipment.

For more information, contact your local Armstrong representative or visit us at:
armstrongfluidtechnology.com/en/industrial/home

Armstrong **Industrial**

As an indication of their approval, the coal face on which our equipment operates is to be used as an example of how the mine would like its longwalls to operate.”



Implementation

Our in-country stock of S500 and S300 pumps at our local factory in Shanghai allowed us to meet the fast-track timeframe of this project. To further facilitate quick implementation, we were able to pre-order materials in anticipation of the final order - which helped to shorten the lead time and meet the two-month project timeframe.

Results (data-backed examples)

Since the system was commissioned there has been no downtime reported (at the time of this case study being written up - some 9 months later). To assist the customer in monitoring performance and uptime, we collaborated with a local control supplier to track and report operating data.

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Customer feedback

After its formal supplier evaluation process, the Dongtai Group gave Armstrong **Industrial** full marks for our product quality and service.

Product quality was formally assessed in terms of the one-time acceptance pass rate and a range of quality measurements. The customer examined our service and after-sales support, finding that our team met their demanding standards for a timely response rate (pre-sales and after-sales), a high degree of cooperation, and our ability to handle any problems.

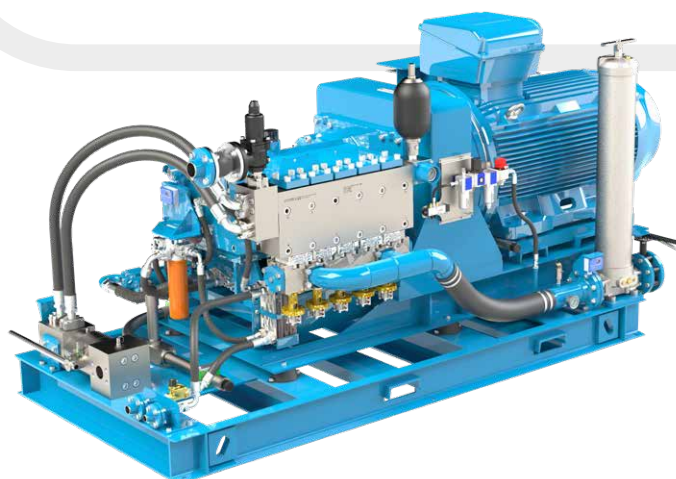
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Scope of supply

Emulsion station: three Quinmax S500 Pumps (630 l/pm) with two stainless steel tanks and controls; accumulator, piping and connections; VFD and explosion-proof starter; mixing station; water treatment station; and filtration station.

Spray pump station: two Trimax Pumps (>500 l/pm) with stainless steel tank; spray supply station; fixed speed motor; and internal piping and connections.

Control and monitoring system



Armstrong **Industrial**