

# Grundfos plays a leading role in helping coal industry

Combine 95 years of experience with the coal industry, Longwall Hydraulics, and Grundfos booster pumps and you have a winning formula for success.

## The Situation

Longwall Hydraulics, which is located in Wollongong, New South Wales, wanted to improve the efficiency of its big emulsion Kamat piston plunger pumps at West Cliff colliery 20 km northwest of the city. But it faced a dilemma. The piston plunger pumps hold up the massive hydraulic underground roof supports – which often use up to 180 cylinders in a line – and the problem was the lack of roof height.

## The Grundfos Solution

Longwall Hydraulics decided to use Grundfos CV90 booster pumps with a four pole motor. However, these reacted poorly under the centrifugal forces and high pressure – sometimes up to 4.0 bar. Running with emulsion fluid the company had nothing but trouble with the solid ceramic plungers, which suffered bad surface pitting. As the surface became rougher it would eventually tear away the packing.

The company urgently needed a solution, and set about seeking a pump with a low boost pressure, low centrifugal forces, and a multiple flow variation at low pressure. It discussed the problem with Grundfos dealer, Dowdens Pumping of Mackay in Queensland.

Dowdens recommended a Grundfos TP125-110/6 with a six pole 4.0kw motor able to operate at 415 volts or 1,000 volts, and provided the pumps which Longwall Hydraulics installed.

Says David Saint, of Longwall Hydraulics: “This pump appeared to be the best choice. The six pole motor reduced the speed of

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**LOCATION:**

Australia

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**COMPANY:**

Longwall Hydraulics

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the impeller, and thus lowered the shear forces on the emulsion, which is a mix of about ninety five percent water and five percent oil.

“The pump produced a maximum of one to two bar through the entire operating range, and was extremely compact in size. Bearing in mind that these pumps assist in pumping rates of two thousand litres per minute, the ability to operate in torrid and harsh conditions experienced underground was also essential.

“The end result has been terrific.

So impressed has Longwall Hydraulics been with the performance of the Grundfos pump, that it has also installed them in Dendrobium Mine (1 unit) in New South Wales; the Grasstree Mine (4) and the Moranbah North Mine (2), Queensland; and Douglas Mine (2 units), South Africa.

#### The Outcome

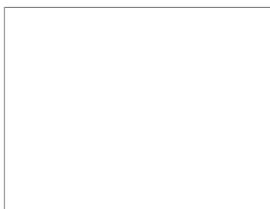
Mr. Saint says that his company is more than happy with the performance.

“We are looking to reduce the operating pressure to around 0.6 to 0.75 bar on all working systems, and Dowdens is being extremely helpful in assisting us to resolve the initial issues we had prior to installing the TP125.

“The Grundfos TP125 is proving its value in longwall coal mining, and as major consultants to the industry we are delighted with the outcome so far. When you consider the difficulties we had in the early days and the problems with solid ceramic plungers pitting badly, we can now see light at the end of the tunnel.”

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