

Application story



Dust Suppression and Cutter Cooling in Mines

Location	UK	Hydra-Cell model	G15XDBTHFECA / G25XKBTHFECA
Type of application	Dust Suppression and Cutter Cooling in Mines	Flow rate	G15 40 l/min (10 gpm) / G25 69 l/min (18 gpm)
Liquid	Water	Pressure	G15 140 bar (2030 psi) / G25 38 bar (550 psi)
Application details	UK-based Dosco builds mining and quarrying machinery, exporting worldwide. The company's Roadheader machines have been used in more than 50 countries, excavating tunnels for underground mine access and civil engineering projects, and for mining production. To cool the cutting picks on these machines and to suppress dust, Dosco's Roadheaders optionally incorporate an advanced 'raised pressure' water spray system designed around Hydra-Cell pumps. An earlier version of the system utilised gear pumps. These were chosen for their pressure capability and rugged construction - but in practice their service life was below expectation. Mine water, gravity fed from a surface reservoir, is not naturally clean. Even when filtered to 100 microns, pumping it can cause problems to any pump (which (like gear pumps) uses dynamic seals or relies on close tolerances to achieve its pumping action. And the spray system has switches, shutting it down if water flow or pressure drops below set points, so failure can mean costly production downtime. With seal-less design, able to handle abrasive particles up to 500 microns, Hydra-Cell pumps cope reliably with the dusty, hot and damp conditions found underground. On both new installations and retrofits, Dosco replaced gear pumps with Hydra-Cell G25 or G15 pumps (38 bar or 140 bar) versions of the raised pressure water system are available). Monitoring performance over the first two years following the introduction of the Hydra-Cell based systems, Dosco found not a single reported problem - though working environments varied and mining locations were as far apart as the USA, China, Iran and Russia.		
Advantages of Hydra-Cell pump on this application	Seal-less design allows the pump to handle abrasive particles reliably. Ability to handle non-lubricating liquids reliably.		

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