PUMPING AN EXPLOSIVE CATALYST

InfoBITS

Pulse-free Delivery of Nitroglycerin Slurry for Mining

In the mining industry, explosive charges are placed in 1-to-2-inch diameter holes drilled into rock. When the dynamite is detonated, large masses of rock are displaced and then mined. Unfortunately, this leads to inconsistent and unpredictable explosions.

A company developed a method of pumping an inert Nitroglycerin slurry through a hose into these bore holes. When the slurry dries it can be detonated. This enables the miners to use less explosive material and results in more consistent, controlled explosions. Transforming the inert Nitroglycerin slurry into an active explosive requires a mixture of water, lubricant, and an abrasive catalyst accurately metered or dosed.

The company installed a compact Hydra-Cell® model D03 pump with an adjustable speed drive that provides constant flow over a wide range of pressures. With its seal-less design, the Hydra-Cell can handle abrasives, and its multiple diaphragms deliver virtually pulse-free flow.

A Hydra-Cell model D03 used to pump a Nitroglycerin slurry is equipped with hydraulic variable speed drive to provide 0.7 to 1.1 gpm constant flow over a pressure range of 75 to 175 psi. The duty cycle is 2 or 3 hours per day with an operating temperature of 70˚F.

Constant Flow Over Wide Pressure Range

Hydra-Cell® Seal-less Pumps

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