

Dyno Nobel's electronic initiation system, EZshot® combines 'the best of both worlds' for underground perimeter blasting.

Drill and blast specialist Dyno Nobel's EZshot technology driven by NONEL® - combines the precision timing of electronic initiation systems with the straightforward setup of non-electric shock tube detonators, to provide an accurate blasting system that is deployed quickly and easily.

The system couples Dyno Nobel's world-class Nonel brand of shock tube - known for its robust application in non-electric blasting applications with a smart detonator that features factory-programmed delay times starting at 1000 milliseconds.

Shotfirer familiarity with Nonel, which has existed since the 1970s, means the switch to EZshot does not require additional training.

"Nonel is very robust in its application," Dyno Nobel vice president, product and applications technology David Gribble says.

"It's abrasion resistant, it has excellent elongation properties and the general feedback we get from our customers is that there are no issues with it as it does what it's designed to do - day in, day out." EZshot's hardy construction and ease of use combined with its electronic initiation technology is designed to deliver "the best of both worlds" for underground perimeter blasting, according to Paul Klaric, technical manager at Dyno Nobel's specialist consulting division, DynoConsult.

"Historically, one of the key issues with electronic initiation systems in development is that they are wire based and tend to take additional time to set up over conventional non-electric (pyrotechnic) initiation methods, where accuracy is related to the length of the delay," he explains.

"As our electronic initiation systems are deployed in an underground development environment where it's high pressure and high intensity, this makes ease of use paramount.

Feedback from customers has been that the product was easy to use and no additional training was required.

"With EZshot we're offering something that is robust, simple to use, and doesn't add any more time to what you're doing while providing the results of an accurate electronic delay." Dyno Nobel is progressing value propositions for wider use of EZshot, but the company's initial focus is on underground perimeter mining.

The company believes the system will provide the biggest benefit to miners in the underground due to the associated reduction of overbreak that comes with the implementation of an electronic detonator.

Overbreak, where the volume of rock removed during the blasting process is in excess of design, is a condition caused by unfavourable geological conditions and inefficient or excessive drilling and blasting.

The volume of overbreak can be significantly reduced through electronic initiation, as it gives miners the ability to allow precision timing in perimeter holes. This leads to safer and more stable drive profiles, and less mucking and hauling after the blast, saving time, as well as money.

The inherent scatter of standard pyrotechnic delay blasting can result in scenarios where these perimeter holes (half barrels) are not visible after the blast. Electronically initiated blasting allows miners to see where drilling has occurred as half barrels are a good indicator of controlled blasting - and then the drilling profile is adjusted as required.

"In underground blasts, the blast duration is longer, and the longer the delay used, the more scatter you get with non-electric detonators," says Gribble. "With accurate and precise timing, the breakage at the perimeter can be much cleaner, and miners can deliver profiles to design.

"EZshot is effectively giving underground miners an improved technology advantage, without extra training or any changes to what they are currently doing.

The demand for EZshot, launched in the United States in January and in Australia in February, is outstripping supply, according to Dyno Nobel. The company has rolled out the product in the Mt Isa region of Queensland and is building case studies to further elaborate on its benefits.

"The work we've done underground with electronics in development mining shows a reduction in overbreak through timing accuracy, improved profiles - thus improving safety -and conformance to design. Combining that precision timing with the ease of use and simple deployment of Nonel, really drives the value of EZshot home," concludes Klaric.