Healthier trucks and clean air underground—partners in mining technologies

American mines are safer and more efficient thanks to Australian technologies

‘Blood tests’ for big machines

Mining companies across America are increasing the reliability of their trucks, diggers, and other big machines, and saving hundreds of millions of dollars in the process. They’re giving these big machines regular health tests and comparing the results with a global database for that machine. The result? They’re fixing machines before they break. This preventative health system was developed by an Australian company, Dingo, which now has 40 people working at its bases in Denver, Brisbane, and Calgary.

The results can be dramatic. For example, Dingo maintenance support has improved the engine life of a widely used CAT mining truck by an average of 61 per cent. And they’ve more than doubled the life of certain Cummins diesel engines working underground.

Dingo was founded in 1991 by Paul Higgins when he realised that, just like blood tests, oil samples from machinery could reveal the health of the machine. “I thought, that’s brilliant. That’s the future right there—doing maintenance by using what the machine is actually telling you about itself,” he says.

Dingo now leads the world in predictive maintenance for companies with big, expensive assets that they need to work hard. Mining companies, train operators, wind turbine operators, and many other companies are asset-intensive. They need to keep their machines in peak condition to maximise production and avoid expensive and potentially dangerous failures.

How does Dingo work? As a technician inspects, tests, and photographs a machine, the data they collect goes via the cloud to Dingo, where an expert can instantly compare the results with industry standards and advise on the appropriate maintenance or repairs.

Clean air underground

The air is cleaner in mines around the world thanks to filters developed by a Melbourne company working with 3M and BHP Billiton.

Micro Fresh Filters developed their first disposable diesel exhaust filters for underground mines back in 1995 and now makes filters for most mining vehicles.

Using these filters removes up to 90 per cent of carcinogenic particles in diesel fumes. The filters use advanced polymers that also help to reduce the risk of fires by being non-flammable. The filters are also unaffected by water and by low engine back pressure.

Micro Fresh Filters is now Freudenberg Filtration Technologies (Australia).

Also...

Coal companies in Virginia and Indiana are using Australian Jameson Cells to capture and sell coal dust.

Miners are talking using secure communication systems developed by Melbourne’s Excelis C4i as a spin-out of their work with US defence organisations.

Pythons are at work in Alaska to reduce the cost and impact of mining. The Python is a modular ore-concentration plant in the Arctic developed by Gekko Solutions.

Australia’s Steve Durkin has reinvented the ladder for mines. Laddertube is making mines safer in Idaho, Nevada, and Alaska. The fully enclosed plastic tube keeps out rocks, water, and salt buildup that might slow escape from a mine.

Read about these, and other Australia-US partnerships in energy, food, biomedicine, cyber security, advanced manufacturing, and more at www.usa.embassy.gov.au
Dingo’s health checks for big machines are dramatically extending the life of mining truck engines. It’s like a blood test for trucks.