

Machinery you can feel good about....

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In mining, many companies are having to go deeper underground in their search for more minerals. In order to meet the increasing demand for equipment suited to this environment, RDH Mining Equipment Ltd. has led the industry with the development of fully independent, battery electric underground mining equipment. In 2011, it introduced the first in the Evolution battery equipment line, the Muckmaster 300EB, a three cubic yard battery powered underground loader (LHD). The following year it introduced the Haulmaster 800-20EB, a 20 tonne battery powered underground haul truck. Both models have been working underground since their introduction and have proven their value to the mining industry. Reduced costs (ventilation, maintenance, and energy), a healthier work environment, and increased production are but a few of the benefits of battery electric mining equipment over traditional diesel machinery. Due to the success of their battery technology and performance of the previously developed models, RDH is introducing a larger, more powerful underground loader to its Evolution battery equipment line, the Muckmaster 600EB, the world's first 6 yard capacity battery powered underground loader (LHD) for hard rock.

Nearly five years of testing has provided the RDH team with knowledge that only underground working experience can provide. In keeping with their guiding design principle, "simplifying heavy equipment", RDH has simplified and improved the battery system, ensuring a product for customers that is more economical and easier to operate and maintain.

The Muckmaster 600EB has the same dimensions as the company's standard 6 yard diesel loader and all of the features including ride control, enclosed operators cabin with AC and heat, remote control, and a camera system. The 6 yard loader has a charging time of 2 hours, incorporates a battery management system (BMS) and a 400 amp LiFePO4 battery pack. When it comes to the harsh conditions of hard rock mining, the LiFePO4 battery technology offers the greatest combination of performance, safety, cost, reliability and environmental characteristics; tolerant to abuse, extremely stable in overcharge or short circuit conditions, able to withstand high temperatures without decomposing, not prone to thermal runaway, will not burn, does not contain heavy metals, does not exhibit "memory effect", excellent shelf life, long cycle life, maintenance free, maximum power available until fully discharged (no "voltage sag"), and can be safely rapidly recharged.

When compared to their traditional diesel counterparts "battery technology offers a lower life cycle cost (LCC), is safer to operate, and performs better" says Gustavo Portalier, Chief Operations Officer at RDH. "When the diesel engine is eliminated you also eliminate associated maintenance, oil changes, filters, and fuel costs. The cost of charging a battery is about 20% of the cost to fill up the tank with diesel. Add in the costs saved by the reduction in ventilation requirements and the health and safety benefits and mines can achieve significant savings".

