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Caterpillar introduces trolley assist system for Cat® electric drive mining trucks

The new Cat® trolley assist system for Cat electric drive mining trucks is now available for mining operations seeking a means to reduce carbon emissions, lower fuel and engine costs, and boost speed-on-grade for greater productivity. The Cat trolley assist retrofit kit is currently available for the 795F AC truck, and the trolley design is compatible with the three other Cat electric-drive mining trucks—794 AC, 796 AC and 798 AC.

The commercial introduction of Cat trolley assist comes at the conclusion of a nearly two-year pilot project conducted with four 795F AC trucks using 700 meters of electric trolley line at Boliden's Aitik mine in Sweden.

“The Cat trolley assist program at Aitik have been a real success story” says Jonas Ranggård, a program manager at Boliden. “Availability has been high despite the arctic conditions, and we’ve had good support from Caterpillar and all other partners involved. There are few projects that can show both environmental and productivity improvements of this magnitude. This is why Boliden has decided to expand the trolley infrastructure in Aitik and equip its entire 795F AC truck fleet with trolley assist systems.”

“We thank Boliden for their work in demonstrating the capabilities of the Cat trolley assist attachment. The benefits of trolley can be significant in the right conditions, and we would be pleased to discuss site-specific scenarios with customers.” said Eric Ruth, electrical senior product team leader with Caterpillar. “We feel that trolley assist can play a role in achieving mining companies’ greenhouse gas reduction goals. Simultaneously, trolley assist boosts productivity by increasing speed-on-grade. In fact, testing at Aitik mine has shown that a 795F AC equipped with trolley assist is the most powerful mining truck in the world!”

Trolley steps up

The trolley system significantly reduces diesel engine emissions at the mine via substitution of electricity during the most demanding part of the truck work cycle. Powering a 337-mt-payload 795F AC via trolley on a 10 percent grade as it climbs the ramp out of the pit saves up to 40 liters of diesel fuel per kilometer of trolley line. Fuel and engine costs are reduced by more than 90 percent while the truck is on trolley.

The trolley system also boosts productivity. Operating with trolley assist, speed-on-grade increases as much as 100 percent versus diesel-only mode. Using trolley, a loaded 795F can run at 28 kph on a 10 percent physical grade with solid haul road conditions.

The Cat trolley system is fully machine integrated, bringing the benefits of optimized performance and system serviceability to the 795F AC. Caterpillar's higher voltage truck and trolley system is designed to bring advantages through lower infrastructure capital costs and lower power distribution maintenance costs.

Other advantages come from the rugged Cat pantograph, designed to deliver superior uptime and reduced repair costs. A quick-drop feature helps protect the overhead trolley lines.

For more information about Cat trolley assist, contact the local Cat dealer.

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Press Inquiries Caterpillar Trade Press Media Representatives

Americas

Sharon Holling: Holling_Sharon_L@cat.com

Johanna Kelly: Kelly_Johanna_L@cat.com

Europe, Africa, Middle East

Francine Shore: Shore_Francine_M@cat.com

Reader Requests www.cat.com/requestCatinfo