

Inclined Coal Mine Conveyors

RDBR-E TORQUE LIMITING/RELEASABLE BACKSTOPS

PROBLEM

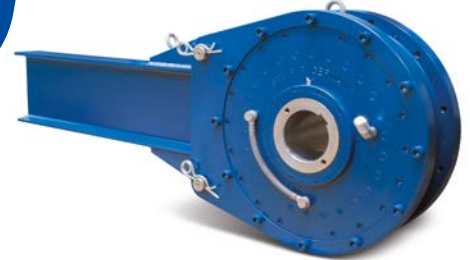
A load-sharing, releasable backstop solution was needed for use on new conveyors at the Moolarben Coal Complex in Australia. When fully operational, the massive facility will produce approximately 17 million tonnes of coal per year. The backstops are installed on the mine's 1800 mm (5.9 ft.) wide, 3,050 m (1.9 mile) long drift conveyor that transports coal from the longwall system underground to the surface. The inclined conveyor features an 80 m (262 ft.) lift and has a capacity of 4,500 tph. Additional releasable backstops were also required for the mine's surface ramp conveyor.

SOLUTION

Based on a long-standing relationship, Stieber Clutch approached the project's conveyor OEM to introduce its new RDBR-E torque-limiting/load-sharing releasable backstop technology. Unlike other backstop designs that offer limited reverse rotation after being engaged, the new Stieber design allows for a controlled release under load while providing virtually unlimited backward rotation for maintenance and clearing work.

The RDBR-E features an internal torque limiter which is specially-designed for use on the low-speed shaft of the driving unit in multi-drive systems, such as on large inclined conveyors, where two or more backstops share the reverse load.

The Stieber backstops were chosen to meet the tough conveyor application requirements due to their superior release functionality. Stieber Clutch provided twin RDBR 300 models with 70 kNm torque per unit for the drift conveyor and a pair of RDBR 360 models with 120 kNm torque per unit for the ramp conveyor.



HIGHLIGHTS

- Low-speed backstop with integrated torque limiter for load-sharing
- Self-contained, externally mounted, ramp-and-roller type backstop
- Specifically designed for multi-drive system
- Release function allows for unlimited reverse rotations to completely unload the conveyor (within limits of energy dissipation)
- Power-dense, compact footprint
- Highest torque capacity for releasable external backstops on the market

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