

BSFH 520 Braking System with SOBO® iQ

COAL MINE LONGWALL CONVEYORS

PROBLEM

A leading mine conveyor OEM needed a complete braking system for use on two downhill longwall panel conveyors at the Deserado Coal Mine located near Rangely, Colorado. Each conveyor is approximately 14,500 ft. long with 725 ft. of drop from tail to head. The 54 in. wide conveyor belt is driven by two 300 HP regenerative VFDs, while operating at a speed of 630 ft/min. to move 1200-1800 tph of coal.

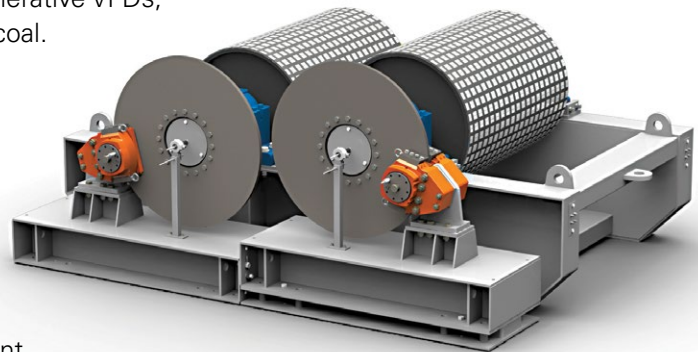
SOLUTION

To meet the emergency stopping and parking application requirements, Svendborg Brakes supplied Model BSFH 520 spring-applied, hydraulically released, dual-spring caliper brakes with 35,969 lb. braking force, each acting on a 50 in. x 1.25 in. standard steel brake disc. The twin-pulley braking system included a single SOBO iQ hydraulic power unit and a SOBO iQ control.

Because the conveyor length varies over time with panel development and as the longwall machine retreats, the braking control was required to maintain the stopping time regardless of the conveyor length.

Svendborg Brakes' industry-leading SOBO iQ braking controller combines cutting-edge technologies to provide significant flexibility, safety and durability on mine conveyors. The controller features three-state digital modulation and a revolutionary dual-loop PI control (pressure/speed). The pressure control is based not only on speed but also on deceleration. SOBO iQ controls braking torque by comparing a preset speed ramp with actual conveyor speed feedback. Advanced functions including independent overspeed monitoring, rollback, gearbox and out-of-band monitoring are included.

Manufactured in-house, Svendborg Brakes' specialized hydraulic power units are engineered to perform in tough mining applications. The units are equipped to monitor oil level and temperature, motor and pump function, and operational pressure.



HIGHLIGHTS

- BSFH 520 dual-spring hydraulically released caliper disc brakes
- Unique soft braking control (SOBO iQ)
- Hydraulic power units manufactured in-house
- Modified Ameridrives Amerigear 20.75 in. dia. FS207 hubs

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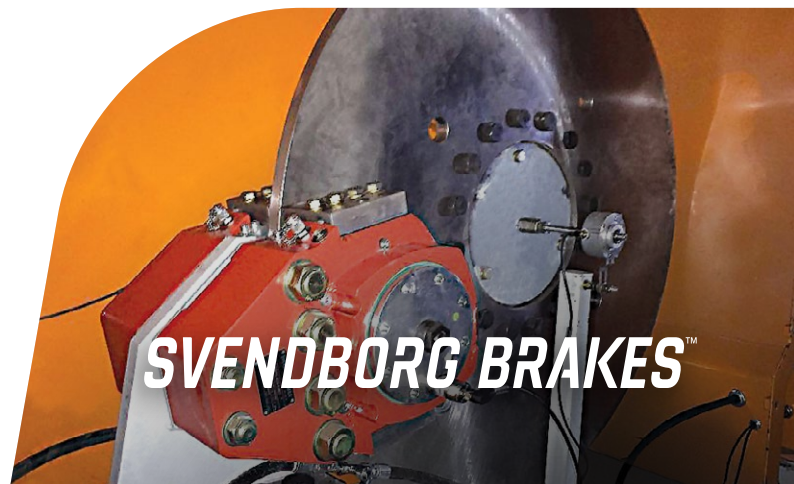
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