



Product

BSFI Series Braking Systems with SOBO® iQ

Application

Iron Ore Mine and Port Conveyors

Highlights

- BSFI 200 & 300 Series, and BSFI 3000 Series dual-spring, hydraulically released brakes
- Brakes provide parking and emergency stopping functionality in case of power failure
- Unique soft braking controls (SOBO iQ)
- Hydraulic power units manufactured in-house

Svendborg Brakes was chosen to supply braking solutions for conveyors at the Roy Hill iron ore mining, rail, and port project in the Pilbara, West Australia. When fully operational, the massive facility will provide 55 million tonnes of ore per year for export.

Braking systems, provided by Svendborg Brakes, were installed on a variety of conveyors throughout the facility. An overland conveyor transports the ore from primary and secondary sizers to a radial stacker that positions the material in a large stockpile area. A series of five parallel incline conveyors feed ore from the stockpile into five scrubbers, slowly rotating drums where the ore is mixed with water to remove undesirable impurities. A long infeed incline conveyor and a series of three parallel incline conveyors feed ore up into three tertiary cone crushers.

Svendborg Brakes was initially contacted by the mine's engineering consultant based on previous successful collaborations spanning many years. The Svendborg Brakes team, working closely with the consultant's engineers, designed braking systems to meet each of the specific conveyor application requirements. Each conveyor braking system consisted of spring-applied, hydraulically-released BSFI Series caliper disc brakes, a SOBO iQ control, a SOBO hydraulic power unit and a disc.

BSFI Series brakes provide parking and emergency stopping functionality in case of power failure. The brake spring packs are sized to suit the individual specific braking torque requirements of the specific application. The brakes feature indicators that detect and monitor brake pad wear and brake on/off status.

Svendborg Brakes' industry-leading SOBO iQ (soft-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).

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.

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Svendborg Brakes technologies were incorporated on a variety of Roy Hill conveyor applications including those listed below. Two-stage power units were supplied with all braking systems.

Overland Conveyor (radial stacker feeder)

BSFI 3000 brakes were installed on the head drive shaft to dynamically stop the conveyor during an emergency or power failure and function as a parking brake when the conveyor is not in use. A 1400 mm (55.1 in.) x 30 mm (1.18 in.) disc & hub assembly was also supplied.

Five Scrubber Conveyors (inclined)

BSFI 200 brakes were installed on the high-speed side of the head drive shaft, between the electric drive motor and the gearbox. They dynamically stop the conveyor during an emergency or power failure and function as a parking brake when the conveyor is not in use. A 1400 mm (55.1 in.) x 30 mm (1.18 in.) disc & hub assembly was also supplied. These drivetrains were frame-mounted and shipped ready-to-install.

Four Tertiary Crusher Conveyors (inclined)

BSFI 300 brakes were installed on the head drive shaft, between the drive motor and the gearbox on these frame-mounted drivetrains. They dynamically stop the conveyor during an emergency or power failure and function as a parking brake when the conveyor is not in use. A 1200 mm (47.2 in.) x 30 mm (1.18 in.) disc & hub assembly was supplied for each braking system.