



Application Success Story



1000 Series Braking Systems Copper/Molybdenum Mine Ball Mills

HIGHLIGHTS

- 1000 Series mono-spring failsafe, direct-acting hydraulically-released caliper brakes
- Six braking systems share the same design, allowing for standardization and reduced spare parts inventory
- Custom-fabricated pedestals feature hard hydraulic piping
- Custom hydraulic power units manufactured and tested in-house
- Locally-based Svendborg Brakes technicians assisted with on-site installation and commissioning

PROBLEM

Complete braking systems were required for 6 new ball mills that were part of a major expansion at an open-pit copper/molybdenum mine in southern Peru. Each mill is 9.5 m (27 ft.) in diameter and equipped with a 22 MW gearless drive. The new mills increase the mine's concentrator output to 360,000 tonnes/day, making it one of the largest copper mines in the world.

SOLUTION

Svendborg Brakes supplied the braking systems for each ball mill consisting of 1000 Series mono-spring caliper disc brakes that provide a minimum of 18,103,932 Nm braking torque per mill. Each system is controlled by a Svendborg Brakes gearless mill hydraulic power unit (HPU).

During normal operation, the spring-applied, hydraulically-released brakes are used in the event of a power failure to prevent bearing damage or as an emergency stop, protecting against further damage to equipment or personnel. The brake system is also used to hold the mill and inch/creep the mill into the correct position/angle for easy and safe liner replacement or general mill maintenance.

The Svendborg Brakes hydraulic power units are custom-designed with failsafe 2-stage controlled braking and a parking/service safety valve. The two braking modes can be controlled remotely via the end user's main PLC, or locally on the HPU's control panel. Manufactured in-house, Svendborg Brakes HPU's are equipped to monitor oil level and temperature, motor and pump function, and operational pressure.

The brakes are mounted to custom-fabricated pedestals that feature hard hydraulic piping. Pedestals can also be equipped with special fittings for easy connection to portable hydraulic maintenance units.

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