

Customer reference case

Mineral industry

SKF sealed spherical roller bearings



Iron ore mining operation benefits from SKF sealed spherical roller bearings

The LKAB mine in Malmberget, Sweden, is one of the most modern operations in the world. The company extracts iron ore from underground mines going down as far as 900 metres. The mine runs non-stop, 24 hours a day, seven days a week.

The company was experiencing high costs and poor reliability in the pinion drive bearings of the mills where the iron ore is crushed. The pinion drives were equipped with open bearings. Grit, dust and contaminants were a constant threat to the bearings. To keep the bearings operating, large amounts of grease were continually pumped into the bearings. LKAB had a total of 100 bearing positions in the pinion drives and was using 100 kg of grease per year, per bearing. The extraordinary amounts of grease resulted in high costs for both the purchase and proper disposal of the grease.

In addition to high costs, the use of large volumes of grease resulted in a potential workplace safety hazard, as dripping grease from the bearing units often caused slippery floors. To clean the slippery floors, the customer used high pressure water to wash the pinion units, which in turn pushed water and dust into the bearing housing. The washing

created an additional hazard as water could seep into nearby electrical motors.

In a test with SKF sealed spherical roller bearings, LKAB found that they could virtually eliminate the need for re-greasing, and no longer needed to invest in a central lubrication system. The test also showed that the service life for an open bearing that was continually relubricated was almost the same as that for an SKF sealed spherical roller bearing.

While the initial cost for the SKF solution was higher, break-even was reached in just one year, and over a five-year period, LKAB achieved significant cost savings.

Additional savings were realized by reducing downtime related to bearing replacement. By eliminating the relubrication system and washdowns related to regreasing, LKAB estimates that SKF sealed spherical roller



Cost/Designation	Open bearing	SKF sealed spherical roller bearing
Total running cost, 10 years	€ 7 860	€ 3 262

bearings will last 10 years – double the prior 5-year service life. Previously, it had taken two men approximately 24 hours to change a bearing at a cost of 5 500 euros per bearing. Now, instead of replacing bearings at 5-year intervals and cleaning grease spills, LKAB personnel can focus on critical gearbox maintenance.

Total savings over 10 years for reduced grease usage

Cost for open bearings with grease	€ 7 860
Cost for SKF sealed solution	€ 3 262
Total savings for one bearing position	€ 4 598
Total savings for 100 bearing positions	€ 459 800

All figures are rounded off and based on customer estimates. Contact SKF to see if this solution can be applied in your operation.

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