

ROX Improves Reliability of Conveyor Tension Drums in Mining Application

A large quarrying operation was experiencing frequent bearing failures on conveyor tension drums due to extreme contamination. Fine limestone dust, combined with moisture and mud from the conveyors' proximity to the ground, was penetrating bearing seals and accelerating wear. The site relied primarily on open steel cage spherical roller bearings, which delivered an **average service life of just two months**—driving frequent maintenance shutdowns, production disruptions, and an **estimated \$4,600 cost per unplanned failure**, not including potential collateral damage to shafts or housings.

The NTN Solution

NTN recommended ROX spherical roller bearings, a robust solution engineered specifically for highly contaminated mining and quarry environments.

Key features of the ROX solution include:

- **100% interchangeability with standard open ISO solutions on the market**
- **Shields provide protection against dust**
- **Increased grease retention inside the bearing**

To validate performance, the quarry tested the ROX solution on a conveyor tension drum operating in a highly polluted area, exposed continuously to limestone dust and ground-level moisture.

The Result

ROX bearings **increased service life by more than five times**, with units still operating after 10 months of continuous use. Enhanced grease retention supported extended maintenance intervals, while **annual unplanned shutdowns were reduced from six to one**, reducing downtime costs from \$27,600 to \$4,600 annually and **delivering an estimated \$23,000 per-conveyor annual benefit**. Following the trial, the customer approved the ROX solution for full-site deployment.



VALUE ADDED BREAKDOWN

UPTIME IMPROVEMENT

\$23,000

DOCUMENTED COST SAVINGS

\$23,000

“Service life is several times higher than open bearings in very dusty environments. ROX has eliminated unplanned downtime and increased production line efficiency. The ability to install the bearings using the same ISO dimensions and accessories is a major advantage. We highly recommend this solution.”

— Quarry Operations Team

ROX

BORN FOR THE DUST.

- 100% interchangeable with standard open ISO solutions on the market
- Shields provide protection against dust
- Increased grease retention inside the bearing



Beyond Bearings

Training. Installation Support.
Trouble-shooting. And more.



Technical Training Unit

On-site, mobile training unit offering specialized, hands-on instruction from NTN engineers



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Your application deserves rock-solid support.

We're here to help you achieve your productivity and performance goals. For more information, contact your NTN Sales Representative or call **1.800.323.2358**. For technical questions, email eng@ntnamerica.com.

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