

TIMKEN

TIMKEN® SEALED SPHERICAL SWING BEARINGS

Draglines are some of the hardest-working machines in mining. Operators expect their draglines to perform 24 hours a day, seven days a week. Keeping them running longer, more efficiently and with fewer repairs ultimately results in higher productivity and lower operating costs. Timken® sealed spherical swing bearings use industry-leading technology to deliver all these advantages over standard swing bearing designs.

SOLUTIONS FOR 1570 MACHINES USING BEARING SLEEVES

The newest design from Timken replaces the cumbersome bolts and retainer plate that require multiple torque adjustments. This new design is a pre-sealed, pre-greased package bearing that utilizes a locknut arrangement to cut the number of installation steps in half. Incorporated seals help keep debris out and lubrication in, providing superior sealing over traditional labyrinth designs. Timken sealed spherical swing bearings are greased for longer re-lubrication intervals. That's less lubrication, less clean-up and less maintenance. This enhanced solution for the 1570 is specifically designed to increase service life and decrease total cost of ownership to improve overall machine availability.

Sealed Swing Bearings Are Designed To:

- Reduce direct maintenance costs and indirect costs from environment clean-up
- Improve uptime because of the simplified and repeatable installation process
- Increase bearing load zones to minimize roller skewing and extend bearing life
- Interchange with existing design envelopes with no modifications to shaft or housing

Design Advantages

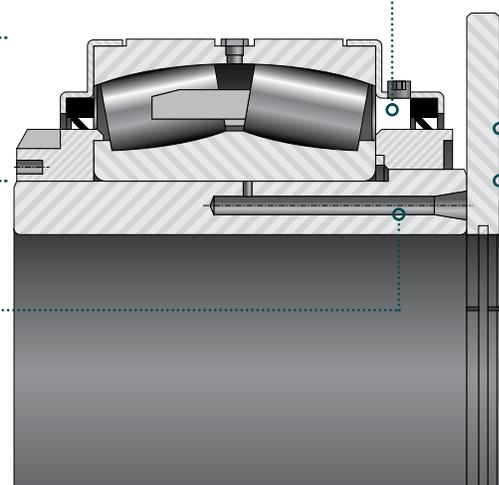
Integrated design for durability and easy installation

Hydraulic assist sleeve speeds bearing removal

Reservoir accommodates grease

Split cover plate facilitates assembly

Cover plate o-ring helps prevent oil ingress from top case



SOLUTIONS FOR 8750 AND 8200 MACHINES

Timken has also developed enhanced spherical swing bearing designs for the 8750 and 8200 draglines. This pre-greased, pre-sealed package design has been in use for over 10 years at mines around the world. These bearings feature enhanced seal designs to help keep lubrication inside the bearing and help eliminate grease leakage out of the bearing and onto the bearing rack. Additionally, the cover plate features an access hole to ease lubrication testing.

Key benefits of this design include:

- Lubricated to last a five year rebuild cycle lowering maintenance costs and improving uptime
- Designed for simplified maintenance and lubrication sampling to increase bearing life
- Installed into the same bearing envelope as the original bearing design without modification for easy interchange
- Enhanced seal design helps operators experience extended bearing performance and protect surrounding systems from grease leakage



One Solution Solves Three Problems

Cloud Peak in Gillette, Wyoming, had three serious problems with the lower swing shaft bearings in its dragline. Leaking lubrication was causing premature bearing failure, potential damage risks to the swing rack, and excess grease usage and disposal costs.

To address these issues, Timken designed a new sealed lower swing assembly for the 8750 dragline – complete with a spherical roller bearing, seals and grease. Now in place on two draglines at Cloud Peak, the sealed lower swing assembly provides peace of mind.

“Timken was aggressive in the redesign and delivery schedule,” said Kelvin Kennedy, consultant dragline and shovel industry. Not only has this work improved installation and operations, but our relationship with Timken has also led to better handling and assembly techniques overall.”

TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets high-performance mechanical components, including bearings, belts, chain, gears and related mechanical power transmission products and services.

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Stronger. **Commitment.** Stronger. **Value.** Stronger. **Worldwide.** Stronger. **Together.** | Stronger. **By Design.**