Increase reliability and decrease environmental impact with the SKF conveyor solution.

OEM Benefits

- Adds value
- Increases MTBF
- Enables downsizing
- Enhances productivity
- Reduces costs
- Simplifies design
- Avoid expensive secondary seals

Typical industries

- Mines
- Ports
- Steel mills
- Cement and aggregates
- Pulp and paper

The problem

The typical operating environment for a bulk conveyor often leads to premature

bearing failures in the head and tail pullies, the take-up pulley and the impact idlers. In these locations, the ingress of dirt, sand and other abrasive contaminants into the bearing is virtually impossible to stop unless special steps are taken.

One way to increase Mean Time Between Failures (MTBF) is to continuously pump large quantities of grease into the housing to protect the bearing. While re-greasing can extend MTBF, it is costly in terms of the initial cost of the lubricant and its disposal, not to mention the cost of manpower. It is also costly in terms of environmental impact. Other ways to increase the service life of the bearings is to use either a solid lubricant in the bearing or, if space allows, auxiliary seals e.g. taconite seals. Though effective in most cases, these two alternatives can be very expensive.

The solution

The SKF solution for conveyors is an environmentally friendly, cost-effective bundle of products that can extend bearing service life without solid lubricants, taconite seals or large quantities of grease.

The solution consists of four basic components:

- Sealed SKF Explorer spherical roller bearings and sealed SKF CARB bearings
- SKF plummer (pillow) block housings
- Standard SKF L or S-type seals
- SKF LGGB2 biodegradable grease

Three layers of protection

The effectiveness of the SKF conveyor solution is in its simplicity. When installed, the solution provides the bearing with three layers of protection during assembly and operation.

Integral bearing seals – These highly effective integral bearing seals keep the lubricant in and contaminants out of the bearing cavity.

SKF L-seal or S-seal – Protects against extremely fine contaminants and can eliminate the need for expensive taconite seals. For very abrasive environments, SKF recommends using S seals in combination with SKF bearings with integral bearing seals.

Housing grease – The housing, on both sides of the sealed bearing, can be packed with grease. SKF recommends LGGB2, a biodegradable, environmentally-friendly solution.

For additional information about SKF products and solutions for the material handling industry, contact your local SKF representative.

The power of SKF knowledge engineering

Drawing on five technology competences and 100 years of application-specific expertise, SKF brings innovative solutions to industrial equipment designers. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanical and electronics into intelligent systems), and a wide range of technical services, from 3-D computer modeling to advanced condition monitoring and reliability systems.

Benefits

Meet customer needs
The SKF conveyor solution offers a cost-effective way for you to build additional value into your conveyor without the need to make expensive modifications. Customers will appreciate that all components are in stock and available worldwide.

Reduce costs
Help customers cut costs and increase MTBF with replacement parts that are standard and priced accordingly.

Downsize
Due to design and manufacturing refinements, SKF Explorer spherical bearings typically enable downsizing of the bearing, housing and shaft.

Faster production
All components are available from stock in most popular configurations, speeding installation by eliminating delays related to back-orders.

SKF conveyor industry study: The cost of bearing failures

SKF recently studied the performance of large conveyors in port and mining applications to determine the causes of bearing failure and the cost of down-time and repairs.

The study, which included five major mining operations and seven ports, focused on head pulley bearings in conveyors with an average of 20 positions. The study revealed that operators prefer to replace the bearings every four years during pulley replacement.

However, the bearings often fail prematurely and unplanned downtime is the result. In most cases, premature failures were due to inadequate sealing and the ingress of contaminants into the bearing cavity.

Mining operations have the highest costs related to unplanned bearing replacement, often losing a full eight hours of production. As shown below, that unplanned downtime can result in costs of more than EUR 87 000.

Cost of bearing replacement (EUR)	Planned maintenance interval	Unplanned bearing failure
Bearing cost	1 000	1 000
Labour (3 men x 8 hrs.)	1 300	1 300
Cost of production loss	0	87 000
Total cost of bearing failure	2 300	89 300

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