



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

## Benefits

- Increased reliability
- Increased service life
- Reduced lubricant consumption
- Reduced environmental impact
- Reduced maintenance costs
- Avoid expensive secondary seals

## Typical industries

- Mining
- Ports
- Steel mills
- Forestry
- 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 pulleys, 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 conveyor solution consists of four basic components:

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

### Three layers of protection

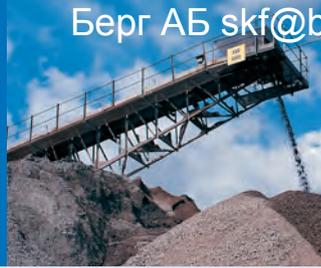
The effectiveness of the SKF conveyor solution is in its simplicity. When installed, the solution provides the bearing with three layers of protection during assembly and operation.

**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.





## Increase the return on your maintenance investment with SKF.

The whole idea behind the SKF 360° solution is to help you get more out of your plant machinery and equipment investment.

This may mean lowering your maintenance costs, raising your productivity, or both! Here's an example of the SKF 360° solution at work in the material handling industry.

### Increased MTBF

The SKF conveyor solution with sealed spherical roller bearings keep contaminants out during assembly and operation, to offer extended bearing service life. If needed, the bearings, housings and housing seals can be changed out during regularly scheduled lagging rework.

### Enhanced ROI

The SKF conveyor solution with sealed spherical roller bearings cut costs by reducing unplanned downtime and the related costs for replacement components.

### Reduce lubrication consumption

Sealed SKF spherical roller bearings, which contain a relubrication groove as standard, are filled with a high-performance grease at the factory and will require less frequent relubrication. Under good conditions they may not require any relubrication. This will reduce the costs for lubricant, lubricant disposal and manpower.

### 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 downtime 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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