Eliminate grease lubrication of cooling beds and roller tables with SKF DryLube Bearings

Benefits

- Reduced maintenance
  - Virtually maintenance-free
  - No need for re-lubrication
  - Reduced need for cleaning
- Increased system reliability
  - Extended bearing service life
  - Less unplanned downtime
- Reduced environmental impact
  - No grease consumption
  - No lubricant leakage
  - Reduced water contamination
- Improved safety
  - Reduced risk of fires caused by grease
  - Elimination of slippery work surfaces caused by grease
- Reduced total operating costs
  - Less maintenance
  - Less lubricant usage
  - Reduced energy costs

Typical applications

- Cooling and roll out tables in all caster types
- Guide rolls in bar mills
- Reheating furnace rolls
- Roller tables in hot rolling mills
- Rolls in bloom and billet casters
- Sinter machine wheels

Engineered graphite solution reduces costs, waste and environmental impact

Roller tables and cooling beds transport hot, semi-finished product to the next step in the production process. The material transported is extremely hot – typically between 800 to 900 °C. This heat, combined with slow rotational speeds, causes lubricant loss from the bearing housings, ultimately resulting in bearing failures and disruptive downtime.

To counter this, a common practice is the excessive use of grease to compensate for both grease loss and degradation, and to act as a barrier to contamination. This results in significant costs for: the purchase and disposal of grease, frequent maintenance in hazardous environments and cleaning and water treatment. Not to mention the danger of fire due to accumulation of grease outside the bearing housings.

Oil-air lubrication is sometimes used as an alternative to grease lubrication, but it is not ideal. It requires a significant capital investment and leads to increased costs for energy and maintenance.

The solution: SKF DryLube Bearings

By filling the empty space inside a bearing with an engineered graphite mixture, SKF provides an efficient and cost-effective alternative to the use of grease in hostile steelmaking environments. Almost any SKF bearing type can be supplied as an SKF DryLube Bearing, providing very low and constant friction, and an extremely high temperature limit of 350 °C. SKF DryLube Bearings do not require re-lubrication, eliminating the cost and environmental consequences of conventional greasing programmes.

For more information about SKF products and solutions for the metals industry, contact your SKF Authorized Distributor.

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 metals industry.

SKF DryLube bearings help steelmaker reduce costs associated with cooling bed

A customer was experiencing problems when process delays caused hot, semi-finished steel to rest in the same area of the cooling bed. As more heat was transferred to the bearing housings, the units' standard grease and seals quickly deteriorated, leaving bearings without adequate lubrication.

The situation caused bearing failures that blocked rolls and, in turn, caused damage to the product surface. This resulted in costs for additional steps (grinding or rework), ultimately affecting mill productivity and profitability. In addition, attempts to correct the problem with frequent re-greasing of the bearings created dangerous work conditions, including slippery floors and a higher risk of fire.

Partnering with SKF

The steelmaker contacted its local SKF distributor to evaluate the problem and find a solution. After considering possible alternatives, the distributor suggested replacing existing conventional bearings with SKF DryLube bearings.

This solution has proven to be an excellent choice, resulting in increased reliability of the steelmaking process, reduced maintenance costs and improved health and safety conditions. In addition to savings from reduced grease usage and elimination of the need for rework, the mill was able to reduce insurance costs due to the reduced fire hazard.

Return on Investment (ROI) summary*

Investment in the SKF solution per guide roll line	**€35 000**
Average mean time between repair before SKF solution	**6 months**
Average mean time between repair with SKF solution	**24 months**
Annual savings per line	**€47 000**
ROI after 12 months	**34%**

*All numbers are rounded off and based on customer estimates. Your particular cost savings may vary.

Additional savings, more difficult to quantify, include:

- Water treatment
- Lubrication system maintenance
- Improved work conditions

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