SKF high-temperature bearings and units for continuous baking ovens

Benefits

- Reduced maintenance costs and time related to lubrication
- Potential for improved productivity through temperature flexibility up to 350 °C
- Decreased downtime by eliminating need for re-lubrication
- Environmentally friendly due to elimination of grease and grease disposal

Typical oven applications

- Bread, rolls, bagels, tortillas, pizza
- Corn chips, crackers, cookies, pretzels, wafers and other snack foods
- Breakfast foods including cereals and energy bars

Maintenance-free, dry lubrication solution reduces downtime costs and contamination risk

Continuous baking ovens used in food production operate at extreme temperatures, in an environment with high humidity and oxidation levels. The combination of these conditions severely affects the lubrication that protects bearings from wear. Grease contamination from the entry of foreign bodies and moisture inhibit lubricant performance, resulting in reduced bearing service life. The need for frequent re-lubrication results in downtime, and increased costs for labour and grease.

SKF has developed graphite-lubricated bearings and Y-bearing units that eliminate traditional lubrication methods and the corresponding problems associated with high temperatures.

The deep groove ball bearings are fitted with a coronet cage made of pure graphite. During rotation, minute quantities of graphite powder are released by the cage, providing adequate lubrication for the bearing. This unique self-lubricating system eliminates the problem of lubricant dripping or lubricant clean-up required with traditional bearing and lubricant systems. The bearing is equipped with shields on both sides, to protect against contamination. All surfaces are manganese phosphate coated to protect against corrosion and enhance running properties.

Photo courtesy of Alitech

SKF self-lubricating, high-temperature bearings and Y-bearing units eliminate the need for frequent bearing replacement and regular re-lubrication

This technology is also available in Y-bearing units. These consist of a cast iron housing with a corrosion-resistant zinc chromate coating to resist flaking, and a high-temperature

Y-bearing insert. Both the SKF bearings and Y-bearing units are designed for applications up to +350 °C.

SKF high-temperature bearings and Y-bearing units provide highly reliable operation despite fluctuating oven temperatures

For more information about SKF products and solutions for the food and beverage industries, contact your SKF Authorized Distributor or local SKF representative.

Increase the return on your maintenance investment with SKF

The whole idea behind the SKF 360° Solution programme is to help you get more out of your plant machinery. Whether your goals include lowering maintenance costs, raising productivity, or improving safety, hygiene and sustainability, SKF can assist. Following is an example of the SKF 360° Solution programme at work in the food and beverage industries.

Pizza manufacturer reduces unplanned downtime and need for lubrication in continuous baking ovens

A manufacturer of pizza was experiencing increased expenses and decreased productivity due to bearing failure and unplanned downtime. The pizza was running through a continuous oven with a throughput cycle of five minutes at 260 °C (500 °F). The line was equipped with standard deep groove ball bearings which were failing due to the combination

of high temperatures and poor lubrication. The manufacturer found that even with frequent lubrication, the bearing positions were still prone to catastrophic failure.

SKF recommended a better solution: SKF self-lubricating, high-temperature deep groove ball bearings. These bearings eliminate the need for lubrication cycles. Just as importantly, they provided 100 percent reliable performance despite fluctuating oven temperatures, and elevated temperatures as high as 350 °C (660 °F).

The result for this manufacturer was a reduction of unplanned downtime, and savings in parts, labour and reduced productivity losses. An additional advantage was that, because of the SKF bearings' higher heat tolerance, the manufacturer was able to experiment with production at various oven temperatures, and actually improved the quality of his product.

Summary*

Savings in parts and labour	**€ 10 000**
Savings through eliminating unplanned downtime	**€ 26 000**
Total savings over 12 months	**€ 36 000**

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

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