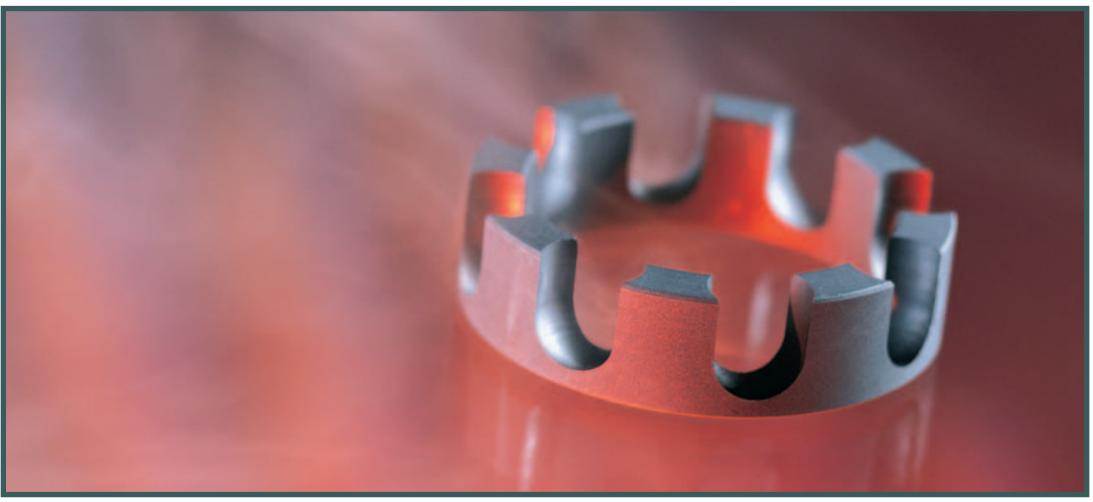


At 150 °C almost all bearings have a fever

SKF





At high temperatures, lubrication is critical. If the soft metal of the cage comes in contact with the bearing, it can seize up and cause the entire bearing to fail.

The first time you lubricate, the end is near

High temperatures are a problem for any rolling bearing. Choosing an expensive, high-quality lubricant makes no difference. The bearing's service life is still much too short.

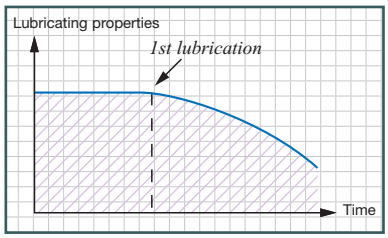
To ensure reliable, economical lubrication for hot applications, you need a brand new approach.
An approach that cuts maintenance costs to a minimum.

When bearings carbonize

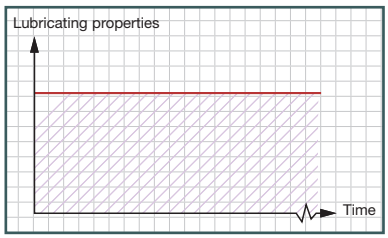
Ordinarily, if the lubricant in a bearing is depleted, it's easy to replace. But at high temperatures, the situation changes. The lubricant isn't just used up; it's destroyed. And that makes all the difference.

Most lubricants have an upper temperature limit of 120 to 150 °C. Go higher and the grease oxidizes. It hardens, and the lubricant can't reach the metal surfaces that need it. Friction and wear increase – and with them the risk of bearing failure.

And this time, relubricating won't solve the problem.



Lubrication with high-temp lubricant: After the first lubrication, the lubrication interval grows shorter and maintenance costs increase dramatically.



Lubrication with graphite technology: SKF high-temperature bearings with graphite lubrication are maintenance-free and have a longer service life.

Artificial respiration

You can't squeeze carbonized grease out of a bearing. It plugs the housing and keeps new grease from penetrating when you relubricate.

In practice, if only half of the lubricant is replaced, the interval until the next lubrication is cut in half. And so it continues, with ever more frequent lubrication. Wear and tear increase – and so does the risk of failure.

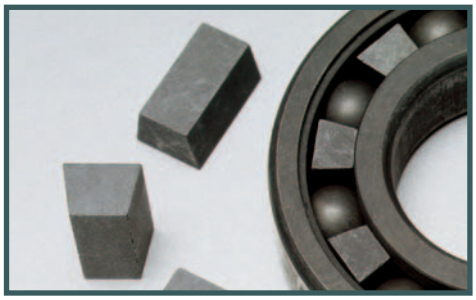
Grease is grease

Often, high-temperature lubricants are used for bearings in hot applications. They differ from ordinary lubricants in two ways: They can handle higher temperatures. And they cost more.

Since even special lubricants suffer from the shrinking lubrication interval syndrome, maintenance costs and lubricant consumption rise with the temperature of the bearing.

There's a cure, though. SKF high-temperature bearings use a lubricating technology that is completely different from oil and grease. A lubricating technology that is maintenance-free and isn't affected by temperature.


212-207-2FW/VA228
MEXICO



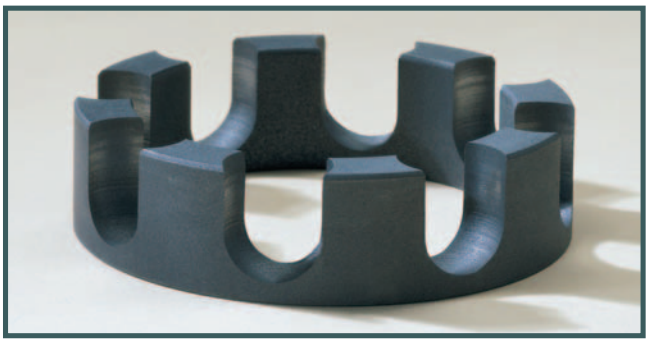
The VA228 and VA208 designs have maintenance-free graphite lubrication for extreme temperatures and extremely long service life. And they are a good choice for the environment at all temperatures. In fact, the graphite is so pure you can eat it.

Would you like to keep your bearings off the sick list?

SKF high-temperature bearings incorporate a unique dry graphite lubrication technology that increases reliability and service life at extreme temperatures. As temperatures climb above 150 °C, graphite lubrication quickly becomes cost-efficient. At these temperatures, applications need constant maintenance, and the cost of special lubricants skyrockets.

No more lubricating

Graphite is an excellent lubricant. Think of an ordinary graphite pencil. The material and the principle are the same: when pressed against a hard surface, a thin layer of carbon crystals comes off, reducing friction. The process is familiar, and graphite is used as an additive to grease for high temperatures. But SKF's dry lubrication technology goes one step further. The graphite is built into the bearing, replacing all other lubricants. Once and for all.



No more maintenance

The graphite lubricant in the VA228 bearing is in the shape of a crown, surrounding and separating the balls in the bearing, and can handle temperatures between –150 and +350 °C, and is intended for speeds of up to 100 rpm. The VA208 has graphite segments between the balls rather than a complete crown. The surface of all the bearings is treated with manganese phosphate to prevent rust and provide run-in surface.

Both bearing types are completely maintenance-free, drastically reducing the costs of special lubricants, maintenance staff and production stops.

Longer service life

All over the world, in a wide variety of applications, experience shows that SKF rolling bearings with graphite lubrication have at least twice the service life – and in many cases hundreds of times the service life – of similar bearings that use high-temperature lubricants. Stable lubrication and low friction are energy-efficient and also save wear on shafts and other components of the application.





The food industry requires lubricants that can handle extreme temperatures and are guaranteed free of toxins for ovens and the like.

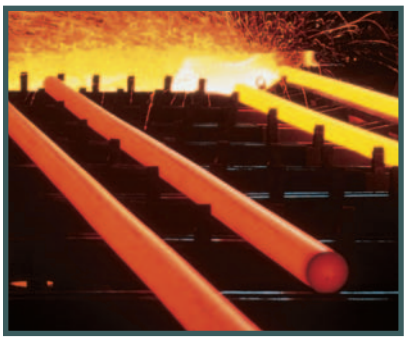
Upgrade with graphite lubrication

All manufacturers want to cut operating costs, right? Many companies with extreme-temperature processes are saving a lot of money with maintenance-free bearings.

Wafer baking oven

The food industry makes extremely tough demands of the processing environment. As a major player in the food processing industry, Franz Haas Waffelmaschinen Industrie AG has to optimize the design of its machines while meeting stringent regulations. The bearings are especially important, and must have a non-toxic lubricant.

That was the challenge for Haas in designing the running wheels for baking machine plates. Previously, these machines used special grease and had to be relubricated regularly, a time-consuming and expensive procedure. Now, SKF high-temperature bearings with graphite lubrication not only fulfill the tough demands of the food industry, they eliminate maintenance for Haas.



Equipment designed for the metal industry operates more efficiently with maintenance-free SKF high-temperature bearings.

Steel cooling beds

SMS Demag AG, a world-class manufacturer of metallurgical plant and rolling mill equipment, replaced an expensive cooling bed lubrication system with SKF high-temperature bearings, and reports excellent results.

At the end of the rolling process in an SMS Demag mill, steel is stored in long rows and slowly cooled on cooling beds that are several hundred meters long. To ensure the quality of the steel, the beds' rollers must rotate continuously.

Previously, SMS Demag used a complicated and very expensive oil–air lubrication system with standard deep-groove ball bearings. Installing high-temperature bearings with graphite eliminated the need for the expensive lubrication system.

Two plants have now been equipped with the SKF high-temperature bearing solution, and SMS Demag reports excellent results.

For more real-life cases from other industries, contact: exopar@skf.com

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