

TAKING HEAT IN DRYER CYLINDERS

TOUGH AND LONG-LIFE (TL) SPHERICAL ROLLER BEARINGS

THE PROBLEM

A paper mill requested that NSK review the relentlessly poor performance of drive side bearings on dryer cylinders, requiring replacement as frequently as 3 to 4 times annually. Upon review of the application and installed bearings, NSK experts determined the root cause of bearing failure was inner ring cracking – a direct result of the thermal stresses inherent to the high-heat conditions of dryer cylinder operation.

THE SOLUTION

A proven countermeasure – NSK’s Tough and Long Life (TL) Spherical Roller Bearing – was recommended and installed. Success was replicated for this customer and by this customer: NSK’s TL bearing solution has been in operation for more than 10 years and has been adopted by the mill plant-wide.

REDUCED PRODUCTION LOSS:

\$211,660

with multiple machine shutdowns eliminated annually

REDUCED BEARING COSTS:

\$7,900

with 1 bearing outlasting 3 to 4 bearings previously replaced

TOTAL COST SAVINGS:

\$226,330

annually, for 10+ years

BREAKING THE BEARING FAILURE CYCLE WITH NSK EXPERTS

Durability and reliability are paramount to bearings that support dryer section rolls in papermaking machines, enduring extraordinary thermal stress while moisture is evaporated from the sheet passing over the heated roll.

For conventional bearings, the hoop stress caused by the rapid temperature rise of the dryer roll is simply too much to bear – inner ring cracking and fracture are all but imminent.





After conducting an application review and bearing failure analysis that confirmed a root cause of thermal stress, NSK experts recommended our TL spherical roller bearings, engineered with advanced material and carbonitriding technologies to deliver unrivalled fracture resistance for a long, reliable operating life.

Installation of TL spherical roller bearings increased the reliability of the rolls and the MTBF of the machine exponentially, prompting the customer to implement plant-wide.

OUTSTANDING LIFE ENGINEERED IN WITH NSK TECHNOLOGY

NSK’s Tough and Long Life (TL) spherical roller bearings are engineered to outlast and outperform conventional bearing solutions in the high-heat conditions of dryer and calender sections of papermaking machines, where bearing failures are an all-too-common obstacle to productivity.

With an advanced approach to material and heat treatment technologies, NSK’s TL bearings deliver unrivalled high-heat stability and reliability with:

-  **More than twice the service life of conventional bearings** when operating under contaminated conditions
-  **High strength resistance** to hoop stress and inner ring cracking
-  **High raceway surface hardness** that promotes a long, wear-resistant service life
-  **Dramatically fewer bearing failures** for optimized machine uptime with reduced maintenance costs

YOUR PARTNER FOR MACHINE OPTIMIZATION

With our Asset Improvement Program and collaboration with NSK experts, customers embark on a critical path to achieving optimal performance and service life from their bearing assets. And to realizing lasting improvements to people, processes and machinery that equate to measurable gains in reliability and productivity.

