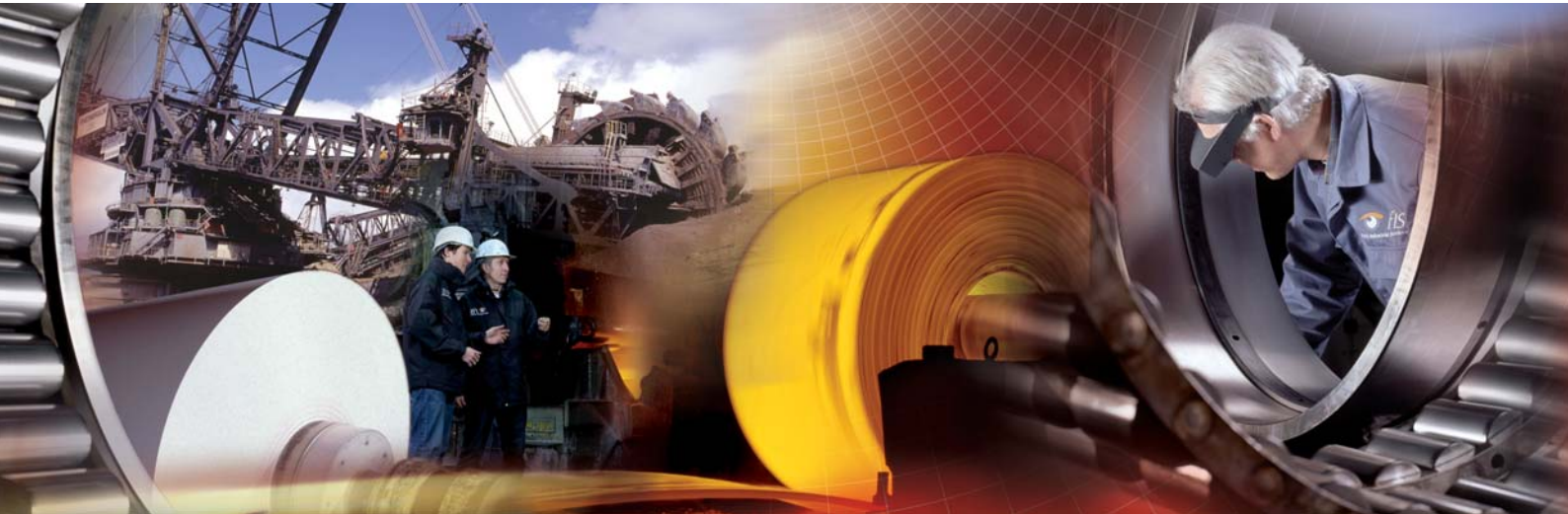


Smart Performance Program



FAG Anti Slippage Spherical Rolling Bearings for Nipco Rolls in Paper Machines

Industry: Pulp and Paper

Customer: Voith Paper GmbH, Krefeld (Germany)

The machine manufacturer Voith Paper GmbH has supplied the ASSR bearing (**A**nti **S**lippage **S**pherical **R**oller Bearing) for the Nipco roll in the calender at the Palm paper mill in Eltmann/Germany. Headquartered in Aalen-Neukochen, the paper manufacturer Palm produces newsprint and telephone directory paper from 100% waste paper at its Eltmann plant.

Challenge for Schaeffler

During production, the gap between the rolls is closed, i.e. a certain pressure acts between the two rolls. Both the nip load and the weight of the roll shell are taken up by hydrostatic control elements. In this condition, only very low loads act on the rolling bearings so that they are subjected to slippage. As a result, premature bearing failures during the low-load phase were experienced for some time. Optimisation of the lubricating system and the use of coated rolling elements reduced the effects of slippage but could not prevent it entirely.



Technical Information about the Plant

Machine:

PM3, year of construction: 1999

Paper grade: Newsprint

Web width: 8,350 mm

Roll diameter: 965 mm

Speed: 1,730 m/min

Schaeffler Solution

Schaeffler has developed an innovative bearing concept for preventing slippage that was installed in the end customer's machine by a team comprising experts from both Schaeffler and Voith Paper. The anti slippage spherical rolling bearing consists primarily of the rings of a standard spherical roller bearing. In each of the two rows of rolling elements, each barrel roller alternates with a ball. In the low-load phase, the balls ensure slippage-free operation. In the high-load phase, the barrel rollers take up the loads. The dimensions as well as the elastic deformation of the balls and rollers are matched to the application.

Customer Benefit

The customer benefits from a longer bearing life and significantly reduced maintenance expenditure. Bearings in this application are subjected to only light loads during operation. With standard bearings, this always means a risk of bearing slippage, which can cause the rollers to produce skidding marks in the raceways. In these conditions, standard bearings can reach a service life of only about one year. The ASSR bearing – which prevents slippage in the first place – is expected to last for at least ten years.

In a ten year period, this solution is expected to save the customer approx. € 100,000.

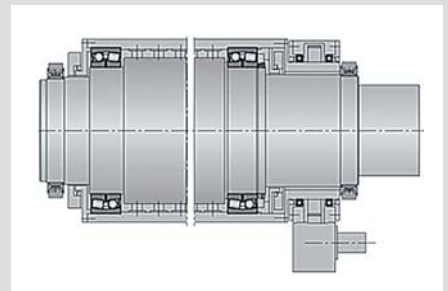
What's special

This bearing type with a combined ball/barrel roller set was developed especially for this specific application.

Technical Information about the Solution

Bearing concept:

ASSR
 (Anti Slippage Spherical Rolling Bearing)
 F-808242.01.KOMB
 (balls alternating with barrel rollers)



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