

Schaeffler Global Technology Solutions

Woodworking Industry

Effective Lubrication Makes all the Difference

The customer operates a sizable hardwood sawmill in which beech logs are cut into boards.

Challenge for Schaeffler

The availability of the wide belt sanding machine is crucial for the completion of the timber planks. Repeatedly, though, premature bearing failure occurred at the tension and contact rolls due to lubricant breakdown. An important factor here was the maintenance requirements of the belt sander. For safety reasons, the machine should be lubricated at standstill exclusively. Restarting the machine then caused thermal overloading of the grease as no distribution grease cycle was carried out. This overheating rapidly led to hardening of the lubricant with bentonite thickener, which directly resulted in premature bearing failure.

Schaeffler Solution

Schaeffler recommended changing over from manual to automatic lubrication, as well as using a different lubricant. Since then, the automatic lubrication system FAG CONCEPT8 has been used to enable relubrication during on-going operation – filled with Arcanol MULTITOP grease.

Due to its partially synthetic base oil, lithium thickener and special EP additives, Arcanol MULTITOP is much better suited for high-speed spherical roller bearing applications than the type of grease used before.

Thanks to the CONCEPT8 lubrication system, the spherical roller bearings are supplied with the optimum quantity of lubricant at short relubrication intervals. This ensures that the grease is regularly refreshed. Unnecessary temperature increases, which can damage the grease and thus the bearing, are effectively avoided.



Technical Information about the Wide Belt Sander

Working width:

1 900 mm maximum

Bearings of tension and contact rolls:

Spherical roller bearings of type 22318

Speed parameter:

420 000 n x d_m





The FAG CONCEPT8 lubrication system can supply up to eight lubrication points



Overgreasing leads to bearing failure



FAG rolling bearing grease Arcanol MULTITOP for use in high-speed spherical roller bearings

Customer Benefit

The automatic lubrication system FAG CONCEPT8 ensures much better and more regular lubrication of the tension and contact rolls.

In addition, due to the more suitable base oil viscosity of Arcanol MULTITOP, the operating temperature within the bearings has been reduced and the risk of bearing damage due to overheating minimized.

This results in the following advantages:

- Improved availability of the bottleneck “wide belt sanding machine”.
- Avoidance of production stoppages and associated downtime costs of several thousand euros daily.
- Reduced maintenance requirements for the operator and longer machine service life.
- Improved accident prevention in hazardous working environments, such as the sawmill, due to automatic lubrication.

What's special

Greases with bentonite thickener have a continuous limit temperature of approx. 70 °C. In this specific case, the maintenance instructions of the machine manufacturer prescribed relubricating the bearings with the machine stationary after 1 200 operating hours with 40 grams of grease – an amount corresponding to half of the initial greasing quantity. If this is carried out according to instructions, the resulting overgreasing will cause thermal overloading of the bentonite grease. This will lead to lubricant failure and accordingly, bearing failure.

Technical Information about the Solution:

FAG CONCEPT8 lubrication system

Pump bodies and outlets:

- With 3 pump bodies (ARCALUB-C8-3P)
- 6 outlets

Lubricant reservoir:

800 cm³

Metering volume per delivery stroke:

0,15 cm³

Maximum pressure build-up:

70 bar

Operating temperature range:

-20 °C to +70 °C

Operating voltage:

24 VDC

Protection class:

IP65

FAG rolling bearing grease Arcanol MULTITOP:

- Thickener: Lithium
- Base oil: Mineral oil with synthetic additives
- Base oil viscosity at +40 °C mm²/s: 82 mm²/sec
- Grease consistency acc. to NLGI: 2
- Operating temperature range: -50 °C to +140 °C
- Continuous limit temperature: +85 °C