

## Your partner for top performance

Extensive range of reliable bearing solutions  
for the paper industry

We pioneer motion

**SCHAEFFLER**

# Bearing solutions for the pulp and paper industry

As one of the world's largest manufacturers of rolling bearings, Schaeffler is an important partner for all leading manufacturers and operators in the pulp and paper industry.

## Product range – Schaeffler offers suitable products for all areas of application

Production step	Stock preparation	Pulp preparation	Paper machine				
Fields of application and machine sections	Woodyard	Fiber recycling and treatment	Forming section	Press section	Dryer section	Finishing	Winder
Key machine and roll types	Debarking drum, wood grinder, wood chipper	Refiner, screen, DD washer, pulper, agitator	Breast roll, suction roll, wire guide roll	Solid press roll, anti-deflection roll, shoe press roll, felt guide roll	Dryer cylinder, Yankee cylinder, stabilizer roll	Super calender, soft calender, spreader roll	Tambour, guide roll
<b>Spherical roller bearings</b>	●	●	●	●	●	●	●
<b>Deep groove ball bearings</b>	●		●	●	●	●	●
<b>Cylindrical roller bearings</b>		●	●				
<b>Self-aligning cylindrical roller bearings</b>				●	●		
<b>Angular contact ball bearings</b>	●	●			●		
<b>Tapered roller bearings</b>	●	●	●			●	
<b>Triple ring bearings</b>				●		●	
<b>Split spherical roller bearings</b>	●	●					
<b>Spherical plain bearings</b>				●		●	
<b>Plummer block housings</b>	●	●			●		
<b>ASSR</b>				●	●	●	

With sound industry expertise and a comprehensive range of products and services, we offer our customers the best solutions for their applications – with maximum reliability even under the toughest conditions.



### Spherical roller bearings

For a long service life at extreme loads and shaft deflections

- In widespread use in the entire paper manufacturing process
- Depending on application, designed for high load-carrying capacity or low risk of slippage
- Ensure precise rolling characteristics and smooth running even at high speeds



### Cylindrical roller bearings

For maximum precision at high radial loads

- Maximum radial load-carrying capacity
- If used as locating or supporting bearings, axial forces can also be supported.
- High speeds
- Precise alignment of bearing position



### Deep groove ball bearings

For low friction and reliable operation

- Robust bearing solution
- Low to medium loads
- Suitable for very high speeds
- Optimized kinematics for low-noise, low-friction operation



## Products for your success

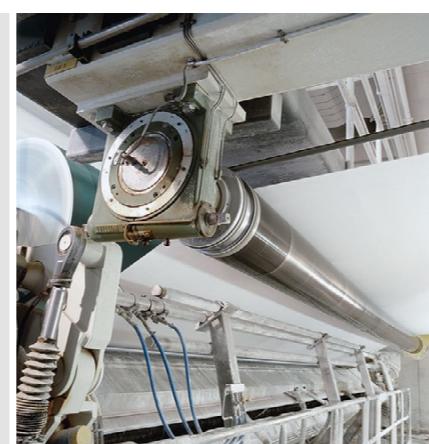
Split spherical roller bearings	Triple ring bearings	Axial spherical roller bearings	Plummer block housings
ASSR (anti slippage spherical rolling bearings)	Spherical plain bearings	Hybrid deep groove ball bearings	



### Customer benefits

- Proven reliability and quality
- Reduced downtimes and maintenance outlay
- High accuracy and smooth running
- All features specifically required for the paper industry available

# The right Schaeffler solution for all challenges

<p><b>Refiner</b> Steaming and defibering the chipped wood with the help of the TMP process</p> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• High temperatures and axial displacements in the floating bearing</li> <li>• Stringent requirements for bearing lubrication and cooling</li> <li>• High axial guiding accuracy necessary to control process effectively</li> </ul>	<p><b>Schaeffler solutions:</b></p> <ul style="list-style-type: none"> <li>• Cylindrical roller bearings with extended inner ring width and larger internal radial clearance</li> <li>• Axial spherical roller bearing</li> <li>• Tapered roller bearing with high axial load-carrying capacity</li> </ul> <p><b>Customer benefits:</b></p> <ul style="list-style-type: none"> <li>• Maximum operational reliability</li> <li>• Reliable adjustment of process parameters</li> <li>• Minimal maintenance</li> </ul>	
<p><b>Press roll</b> De-watering through high mechanical pressure in the nip</p> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• High loaded paper machine bearings</li> <li>• Very high speeds</li> <li>• Critical influence on paper quality</li> <li>• Compensation of shaft deflections</li> </ul>	<p><b>Schaeffler solutions:</b></p> <ul style="list-style-type: none"> <li>• Large size spherical roller bearings with maximum load-carrying capacity</li> <li>• X-life design with increased load rating and reduced friction</li> <li>• Spherical roller bearings with greater runout accuracy</li> </ul> <p><b>Customer benefits:</b></p> <ul style="list-style-type: none"> <li>• Increased reliability of capital-intensive production equipment</li> <li>• Strict requirements for paper quality can be met</li> </ul>	
<p><b>Dryer rolls</b> Remove residual water from the paper through contact with heated dryer cylinders</p> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Compensation of linear thermal expansion</li> <li>• Increased humidity</li> <li>• Greater amount of lubrication necessary for cooling</li> <li>• Bearing operating clearance reduced, especially during heating up process</li> </ul>	<p><b>Schaeffler solutions:</b></p> <ul style="list-style-type: none"> <li>• Spherical roller bearings with larger internal clearance</li> <li>• Case-hardened inner rings</li> <li>• Durotect Z coating for axial displacement with low force</li> <li>• Self-aligning cylindrical roller bearings</li> </ul> <p><b>Customer benefits:</b></p> <ul style="list-style-type: none"> <li>• High operational reliability and prevention of inner ring cracks due to case-hardened inner rings</li> <li>• Coating enables unconstrained axial displacement</li> </ul>	
<p><b>Spreader roll</b> Tensioning the paper web in cross direction</p> <p><b>Challenges:</b></p> <ul style="list-style-type: none"> <li>• Very high speeds</li> <li>• Bearings cannot be re-lubricated or replaced individually</li> <li>• Risk of slippage damage</li> </ul>	<p><b>Schaeffler solutions:</b></p> <ul style="list-style-type: none"> <li>• Deep groove ball bearings</li> <li>• Hybrid deep groove ball bearings with ceramic balls</li> <li>• Self-aligning ball bearings for low load</li> <li>• Proven, low-friction special grease with defined fill level and optimized seal on outer ring</li> </ul> <p><b>Customer benefits:</b></p> <ul style="list-style-type: none"> <li>• Lower operating temperature</li> <li>• High operational reliability</li> <li>• Long grease operating life</li> </ul>	

# A reliable partner for all challenges

Conditions in the pulp and paper industry are tough:

- Elevated levels of humidity
- Very high operating and bearing temperatures
- High speeds
- Heavy dust formation

With products and services provided by Schaeffler, our customers are on the safe side at every stage of the process. Longstanding partnerships and comprehensive industry expertise have given us a profound understanding of all the requirements in the pulp and paper sector. This means that we can offer solutions that are an ideal match for the latest trends and the needs of our customers.

**Overview of Schaeffler benefits for the pulp and paper industry:**

**Development partner & supplier**  
for plant and equipment manufacturers

**Leader in wireless machine diagnostics**

**Forward-thinking expert in automated lubrication**

**Rolling bearing specialist**  
for all areas of application

## What our customers can rely on:



## Schaeffler services for the pulp and paper industry



### Mounting tools

- Laser EQUIALIGN2
- MF-GENERATOR
- HEATER
- Hydraulic pumps
- Hydraulic nuts HYDNU
- Mechanical equipment



### Lubricate

- OPTIME C1
- CONCEPT1-8
- ARCANOL



### Monitor

- ProLink CMS
- SmartCheck
- OPTIME condition monitoring
- GreaseCheck
- Predict-Adapt
- Power-Adapt



### Mounting service

- Remote mounting service / virtual fitter
- Global network of experts
- Profound experience and expertise



# Customer success stories

Learn how customers are using our solutions successfully

**Pump safely monitored and lubricated**  
Unplanned downtime prevented, high savings  
» Weig, Germany

To prevent unplanned downtime of a centrifugal pump and thus a production stop, the cardboard manufacturer WEIG opted for the Optime CM monitoring system. OPTIME C1 automatic lubricators were also installed.



**Smart machine monitoring**  
Increased safety, reduced downtime and costs  
» Stora Enso, Finland

Stora Enso was searching for a monitoring solution for the various drive units at one of its Finland-based plants Sunila. The global corporation opted for Schaeffler OPTIME. This wireless solution offers Stora Enso's Sunila Mill the opportunity to monitor the assets that have previously been unmonitored due to high costs.



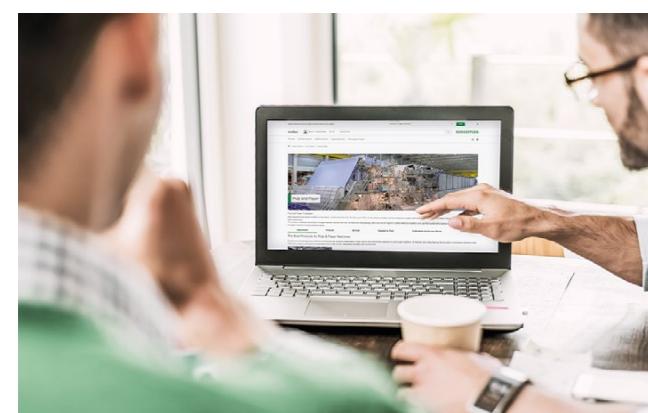
**Condition monitoring on a paper machine**  
Annual savings of almost €100,000  
» renowned cardboard manufacturer, Spain

The customer recorded four unplanned downtimes per year. This results in no financial losses. In order to avoid such production downtimes in the presses of the wet section in future, the operator uses the ProLink CMS vibration condition monitoring system.



**Further information and success stories from pulp and paper production**

On our medias page for pulp and paper production, you'll find information about our products and solutions as well as other publications and success stories from the industry.



## medias

**Digital knowledge database and product catalog**  
On Schaeffler medias, you'll find all you need to know about our industrial products and solutions conveniently in one place.

### What medias offers:

- Detailed information about our products and solutions
- Useful engineering tools that help you select, calculate and configure the products.
- Specific solutions for special applications
- Free newsletter with industrial news from Schaeffler
- Extensive knowledge database with white papers, online courses, customer success stories and more



# Remanufacturing

Sustainable service for longer operating life of rolling bearings

Extend the service life of your medium and large size rolling bearings by having them reconditioned.

### Cost-efficiency

The characteristics and condition of rolling bearings have a significant influence on the production process. Preventive and condition-based maintenance can achieve a consistently high level of plant and equipment availability.

Often, new rolling bearings are installed although the existing bearings could be restored to as-new condition by means of appropriate reconditioning.

**In many cases, the reconditioning of rolling bearings is more cost effective than using new bearings.**



### Benefits

- Savings in material and energy costs
- Reductions in life cycle costs (LCC)
- Reduced inventory costs thanks to lower procurement costs
- Same quality requirements for components and new parts



- Considerable flexibility thanks to short lead times
- Helps protect the environment – CO<sub>2</sub> emissions reduced by up to 95%.

## Engineering Tools

### medias-interchange

medias-interchange can help you to find the INA/FAG designations corresponding to various rolling bearing designations from other manufacturers

### Housing selection assistant

Comprehensive support with selecting housings and housing units. This tool takes account of the ambient conditions and requirements to be met by the bearing arrangement.

### Rolling bearing selection assistant

One of over 24,000: The assistant helps engineers to find exactly the right bearing for their application.

## Schaeffler Apps

### Mounting Manager App

This is a user-friendly tool that helps you choose the correct bearing installation, calculates the necessary installation parameters, provides a list of the accessories and tools required, and offers a host of other useful features.

### OriginCheck App

This app helps to ensure that the product originates from Schaeffler. Simply check the data matrix codes on the rolling bearings or their packaging.

### Grease App

Know how and when to lubricate – it's easy with the free Schaeffler Grease App.



**Schaeffler Technologies AG & Co. KG**

Georg-Schäfer-Strasse 30  
97421 Schweinfurt  
Germany  
[www.schaeffler.com](http://www.schaeffler.com)  
[info@schaefller.com](mailto:info@schaefller.com)

In Germany:  
Phone 0180 5003872  
From other countries:  
Phone +49 9721 91-0

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