

A photograph of a paper mill interior, showing a large roll of paper being processed by machinery. The scene is dominated by industrial equipment, including rollers and structural beams, with a large roll of paper in the foreground. The lighting is bright, highlighting the textures of the paper and the metallic surfaces of the machinery.

Solutions Tailored to the Paper Mill Industry:
Spherical Roller Bearings.

SNR - Industry



SNR Bearings

are in the Very Fiber of the Paper Mill Industry

The transformation of a tree trunk into spotless paper requires a large number of operations. Working and treating the fibrous mass resulting from the wood involves the use of numerous machines, in which bearings are key components. Because of its extensive experience, SNR can offer the paper mill industry the appropriate solution for each stage of the papermaking process.

From logs to wood chips: obtaining the fibers

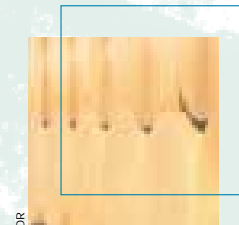
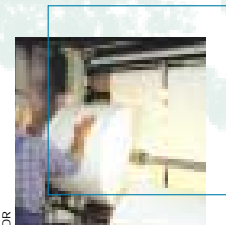
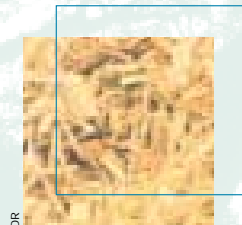
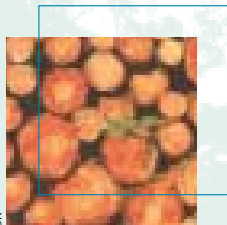
- **Bark-removal machine:** The bark is stripped off, as only wood is used in the papermaking process.
- **Cleaning machine:** Logs are then washed and inspected to detect and remove any pieces of metal or stones.
- **Chipping machine:** Clean logs are put into chippers that reduce them into chips of approximately 4 cm (1^{1/2}" length and 5 mm (0,197") thickness.

Pulping

Wood is made up essentially of cellulose fibers bound by lignin. These fibers must be separated in order to transform the wood into pulp.

Two techniques are used:

- **Mechanical pulp:** The wood is chafed then kneaded in a hot water bath to separate and break the cellulose fibers (e.g. newsprint paper).
- **Chemical pulp:** Chips are baked at high temperature with chemical products in huge autoclaves. The combined action of chemicals and heat dissolves the lignin and releases the long fibers from the wood without breaking them. This is why paper made from chemical pulp is extremely resistant.



The Best Possible SNR Solution for Each Stage of Production

Forming: sheet forming zone



The breastbox, a vital part of the machine, helps control the uniform distribution of the pulp on the wire gauze.

The wire gauze supports, conveys and coarsely drains the fibers that are further dewatered by the suction boxes.

Fourdrinier machine, breast roll

- SNR double-row spherical roller bearing Series 22300, 23200, etc., standard clearance, B33
- Tapered bore

Fourdrinier machine, dandy roll

- SNR double-row spherical roller bearing Series 22300, etc, standard clearance, B33
- Tapered bore

Fourdrinier machine, couch roll

- SNR double-row spherical roller bearing Series 23000, 23100, 23200, etc., standard or J30 (C3) clearance, B33
- Tapered or cylindrical bores

Fourdrinier machine, felt carrying roll

- SNR double-row spherical roller bearing Series 22200, 22300, 23200, etc., standard clearance, B33
- Tapered bore

Pressing



Presses or calenders (draining and pressing) serve a dual purpose: Increase the dryness of the sheet and improve the density and strength of the damp sheet by compression.

Suction rolls

- SNR double-row spherical roller bearing Series 23000, 23100, etc., standard or J30 (C3) clearance, B33
- Tapered or cylindrical bores

Press rolls

- SNR double-row spherical roller bearing Series 23100, 23200, etc., standard or J30 (C3) clearance, B33
- Tapered bore

Wet felt carrying rolls

- SNR double-row spherical roller bearing Series 22200, 22300, 23200, etc., standard clearance, B33
- Tapered bore

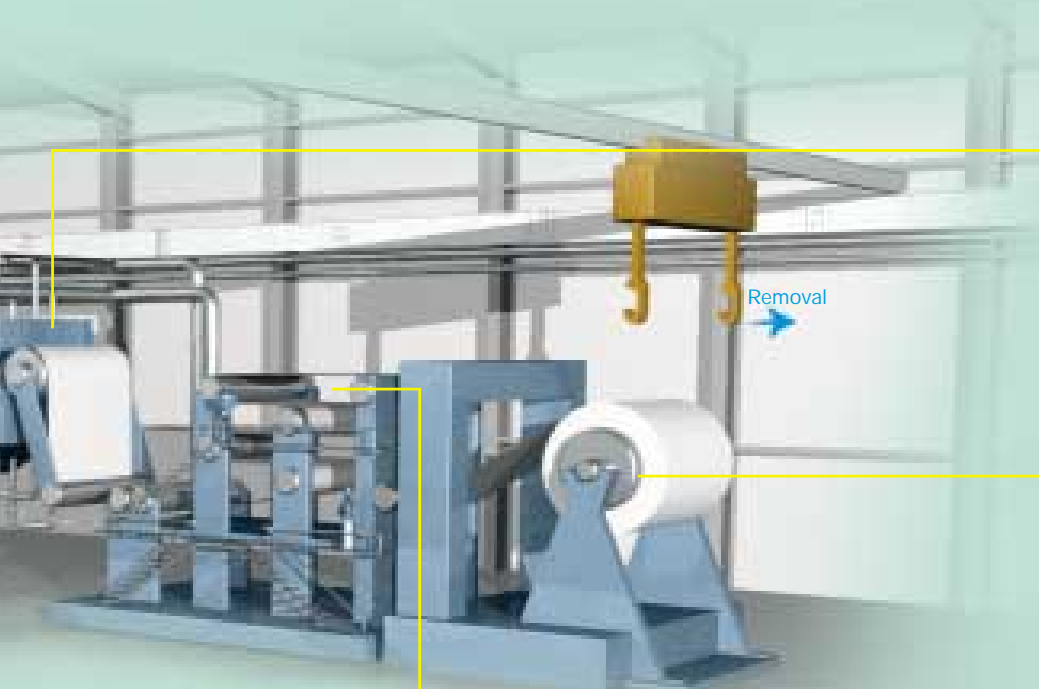
Lower or upper press roll

- SNR double-row spherical roller bearing Series 22300, 23100, etc., J30 (C3) clearance, B33
- Tapered bore

Friction press

- SNR double-row spherical roller bearing Series 22300, 23100, 23200, 24100, etc., J30 (C3) clearance, B33

↓ Loading



Drying



The dryer section removes the remaining water.

Felt carrying rolls

- SNR double-row spherical roller bearing Series 22200, 22300, 23200, etc., J30 (C3) clearance, B33
- Tapered bore

Dryer rolls

- SNR double-row spherical roller bearing Series 23000, 23100, etc., J40 (C4) clearance, B33
- Tapered bore

Reeling



A wind-up turret transforms the continuous strip from the reel winder into rolls, eliminating any defective parts in the process.

Reel Winder Cylinders and Drums

- SNR double-row spherical roller bearing Series 23100, 23200, etc., standard clearance, B33
- Tapered bore

Calendering



Calenders calibrate the paper and give it its final surface finish. The reel winder then coils the continuous strip of paper produced by the machine onto a mandrel.

Calendering Machines & Super Calenders

Non-Heated – Intermediate and Upper Calender Drive Rolls

- SNR double-row spherical roller bearing Series 23000, 23100, 23200, etc., standard clearance, B33
- Tapered bore

Non-Heated – Lower Roll

- SNR double-row spherical roller bearing Series 23200, 24100, etc., standard clearance, B33
- Tapered bore

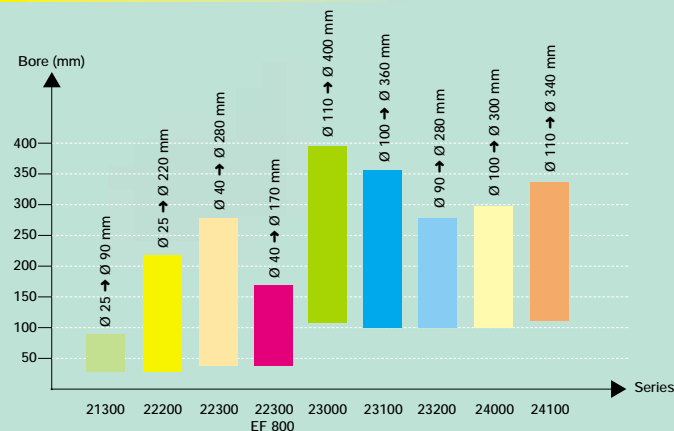
Heated – Drive Roll and Intermediate Roll

- SNR double-row spherical roller bearing Series 23000, 23100, 23200, 24100, etc., J40 (C4) clearance, B33
- Tapered bore

Heated – Lower Roll

- SNR double-row spherical roller bearing Series 23200, 24100, etc., J40 (C4) clearance, B33
- Tapered bore

The SNR Line



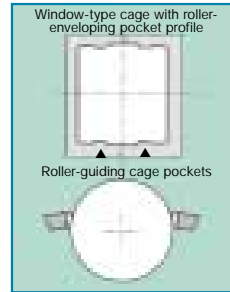
Spherical Roller Bearings:

A Severe Environment for Bearings

The papermaking environment is particularly harsh for bearings:

- *Presence of water and hot steam, therefore risks of corrosion,*
- *High speeds of rotation and heavy loads,*
- *Need for rotational accuracy,*
- *High temperatures,*
- *Aggressive chemical products, particularly during the bleaching process,*
- *Very high dust levels.*

The SNR product line can meet all these requirements thanks to its extremely reliable mechanical design and the use of high-performance materials.



SNR EA Series (Pressed Steel Cage)

- Suitable for standard applications.
- Specific heat treatment for the inner and outer rings to ensure their dimensional stability at operating temperatures up to 200°C (390°F).
- Window-type cage conforming closely to the contour of the rollers to ensure perfect roller guidance and avoid overheating.
- A larger gap between the 2 rows of rollers allows:
 - Expansion of the lubricant reservoir.
 - Improvement of lubricant flow within the bearing.
 - Increased bearing life.



SNR EM Series (Machined Cage)

- One-piece machined brass cage: excellent resistance to impact.
- Cage centered on the rolling elements to prevent cage jamming due to thermal expansion.
- Re-lubrication groove and holes (B33).



SNR offers a full line of standard bearings for your accessory equipment (pumps, fans, electric motors, etc.), including:

- Ball bearings.
- Tapered roller bearings.
- Cylindrical roller bearings.
- Split cast-iron pillow blocks and self-aligning bearing units.

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