Long lasting solutions for smoother textile operations

SKF capabilities for the textile industry

The Power of Knowledge Engineering

Improving efficiency and reliability

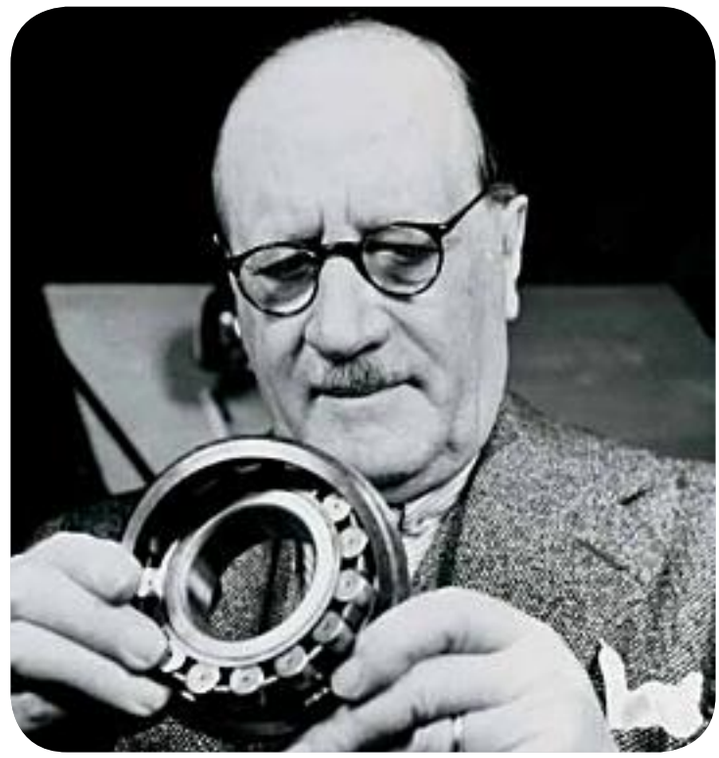
With 15 employees in 1907 and from one simple but inspired solution to a misalignment problem in a Swedish textile mill, SKF has grown to become a global industrial knowledge leader. Over the years, we have built on our expertise in bearings extending it to seals, mechatronics, power transmission products, services and lubrication systems. Our knowledge network now includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries and a growing number of SKF Solution Factory sites around the world.

Increased competitiveness in terms of cost and quality has become the sole driver of the textile industry: Be it in yarns, fabrics, garments or industrial textile products. Of course, if not delivered on time then the above parameters fall apart. Additionally, businesses are feeling the heat because new drivers such as environment-friendly processes (effluents and emissions) are being added. In European countries, US and Japan, green brands are preferred. Increased awareness in end users and the race among brands to differentiate themselves from the competition is so fierce that customers do not mind paying extra. This demand is currently driving the industry.

Textile operations have been exposed to severe operational hazards starting from dusty to fibrous to wet and chemical processes. Spinning machines have, to a great extent, controlled the working environment, but fabric processing operations are still the most hazardous of them all. Even the synthetic fibre/filament industry exposes its workers and machines to a hazardous chemical environment that can take a toll on both of them.

SKF is partnering with Original Equipment Manufacturers (OEMs) to achieve greater efficiency and reliability through process improvements. These changes help reduce avoidable costs and the impact of equipment failure.

With a host of product and service solutions, SKF can help address the challenges you face in your plant, starting with the critical ones discussed here.



Working closely with you

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

Innovative solutions

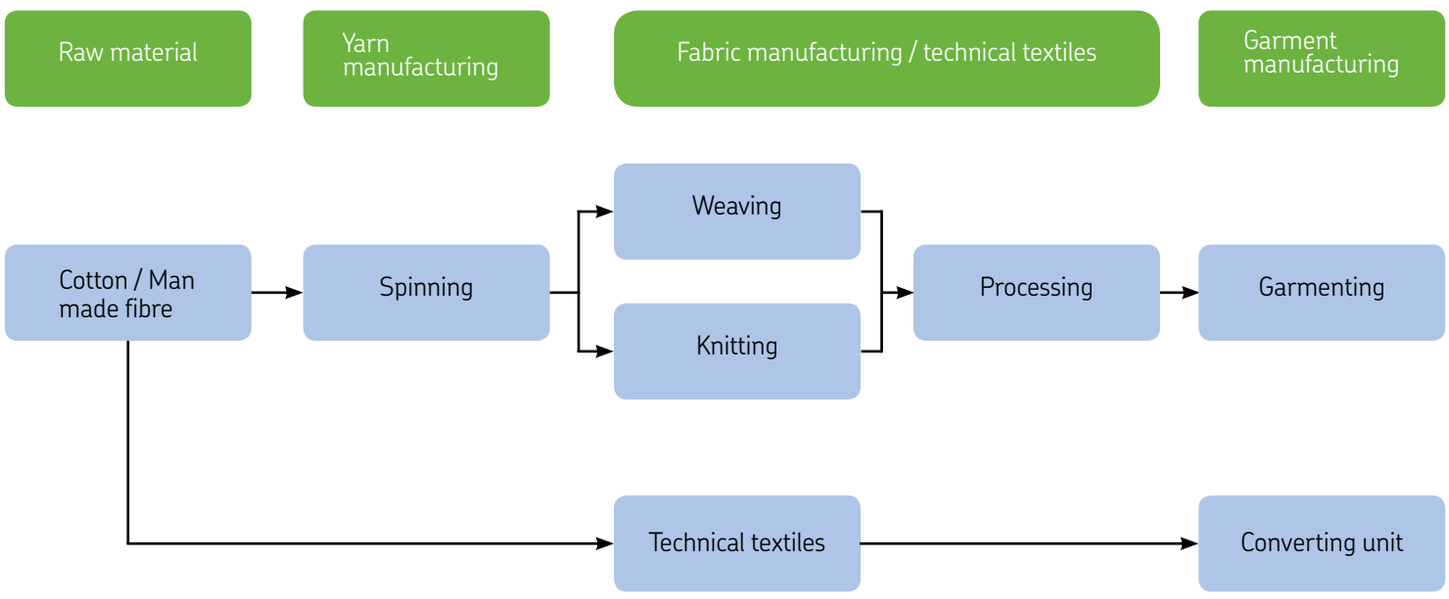
Whether the application is rotary or linear or a combination of the two, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by comprehensive assessment of the entire application. This approach does not just focus on individual components like bearings or seals or lubricants, it looks at the whole application to see how each component interacts with the others.

Design optimization and verification

SKF can work with you to optimize current or new designs with a proprietary 3-D modelling software that can also be used as a virtual test rig to confirm the integrity of the design.



Every stage of your process can benefit from SKF knowledge engineering



Yarn manufacturing

Various applications for opening and cleaning the raw material, namely cotton, make the preparation areas contaminated with flies, stalks and dust. As humid conditions are a must for spinning, process material and dust level can severely affect rotating equipment and also enter the bearings.

These operating conditions can lead to lubrication loss, increased maintenance and quality problems. Fibres in any form create a capillary action by virtue of which the base oil from the lubricant is bled out leaving the bearings dry.

To prevent these issues common to contaminated environments, SKF offers several solutions:

- Effective bearing sealing solution with low to high friction contact
- A wide range of sealed self-aligning bearings
- Varied range of energy-efficient bearings in ball and roller designs
- SKF maintenance-free Y-bearing units with various sealing possibilities
- Bearings with various degrees of grease fill
- Hybrid and insocoat bearings to counter electrical erosion
- SKF V-belts, chains, and couplings to save electricity and improve service life

Fabric forming

Slow rotating applications and intermittent operations are critical to the maintenance process as the quality of the fabric being woven can get affected. From handling of the most delicate construction fabrics to heavy/industrial construction fabrics, each one calls for customized attention. Contamination in semi-wet form, starches, steam ingress affects the life of bearings, lubricants and seals. Needless to say these failures adversely affect the quality and output of the fabric.

- Effective bearing sealing solution with high contact seal and sealing material options to choose from
- Cam followers, track rollers etc. with effective re-lubrication provision for the shock loads arising out of weaving machines
- Dry lubricated bushes for compact lubrication-free component rotation
- Solid oil and stainless steel bearings for stain-free production quality
- Customized bearing units for typical applications

Fabric processing / finishing (Processing by application of heat / chemicals)

With temperatures ranging between 120 °C and 150 °C, processes such as rinsing, de-sizing, bleaching, scouring, washing, drying and calendaring contribute to high operating costs for rotating machinery. High temperatures require frequent bearing re-lubrication, which can cause grease leakage with possible risk of foreign bodies contaminating the process. Waste management costs are also a consideration. Exposure to bleaching agents, steam, dyes and colouring chemicals further aggravate the condition. SKF has the expertise to understand and address these concerns with its wide range of solutions.

- Seals to withstand the combination of wet conditions, chemical reactions and thermal expansion
- Application specific external sealing solutions
- Chemical-resistant Y bearings and composite housings, with stainless steel inserts and water-resistant greases
- Customized bearing units for demanding applications with different grease fill, change of cage materials / seal materials
- Wide range of self-aligning bearings – both ball and roller types
- Special bearings made of polymer and stainless steel for washing ranges
- Quick reconditioning of shafts due to grooving is possible with wear sleeves
- SKF lubrication systems can automate and optimize lubrication in extreme temperature conditions
- SKF also provides maintenance products such as induction heaters, pullers and high temperature gloves



Post processing

Unplanned stoppages in filling, sealing and labelling lines can delay deliveries and impact profitability in the post processing stage. In palletizing areas, heavy loads and shock loads can lead to component failures that drive up costs and disrupt deadlines.

SKF can help make post-processing activities reliable

- SKF Y-bearing units can help withstand heavy loads and shock loads, while increasing reliability and productivity
- SKF lubrication systems and sealing technologies can help increase reliability and productivity
- Electromechanical actuators can reduce noise by eliminating use of high pressure pipes and improve operator work conditions

Garment industry

With extreme pressure on manufacturing costs and tight delivery schedules, machinery downtime is unacceptable. Most of the operations demand linear motion - up / down / sideways.

Patterning, cutting, stitching, folding and packing are key operations. Fly contamination and the speed of operations are major challenges, along with huge labour turnover.

SKF can help address these challenges effectively

- Low friction sealed bearings lubricated for life for stitching machines
- Pre-lubricated linear bearings such as LBBR / LBCR that offer shaft solution for hemming machines
- Precision linear guide rails with carriage for reliable operations
- Automatic lubricators in a wide range for scissors and other similar operations that require consistent lubrication and in places that are difficult to access

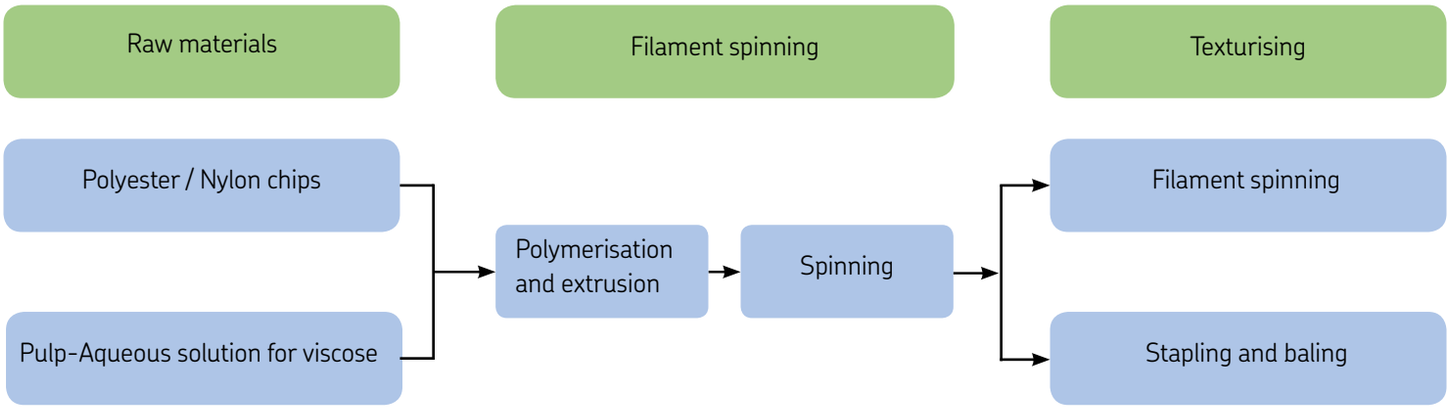
Packaging industry

The packaging industry, which is plagued by heavy calcium contaminations, static charges generation due to processing of hydrophobic material and highly migratory nature of labour - needs bearing for its rotating equipment to withstand these challenges. Woven sack looms, tape yarn winders, sack printing machines etc. consumes major chunk of small size bearings and timing belts, pulleys, chains, sprockets, and couplings.

SKF can help address many of these concerns

- Low friction sealed bearings to reduce energy consumption and protection from contamination
- Electromechanical actuators for precise positioning / printing
- Pre-lubricated linear ball bearings / bushes
- Energy-efficient bearings
- Customized small DGBBs with low friction seals with special grease fills
- Timing belts (HiTD), taper lock bushes and pulleys

Man made fibre / synthetic fibres industry

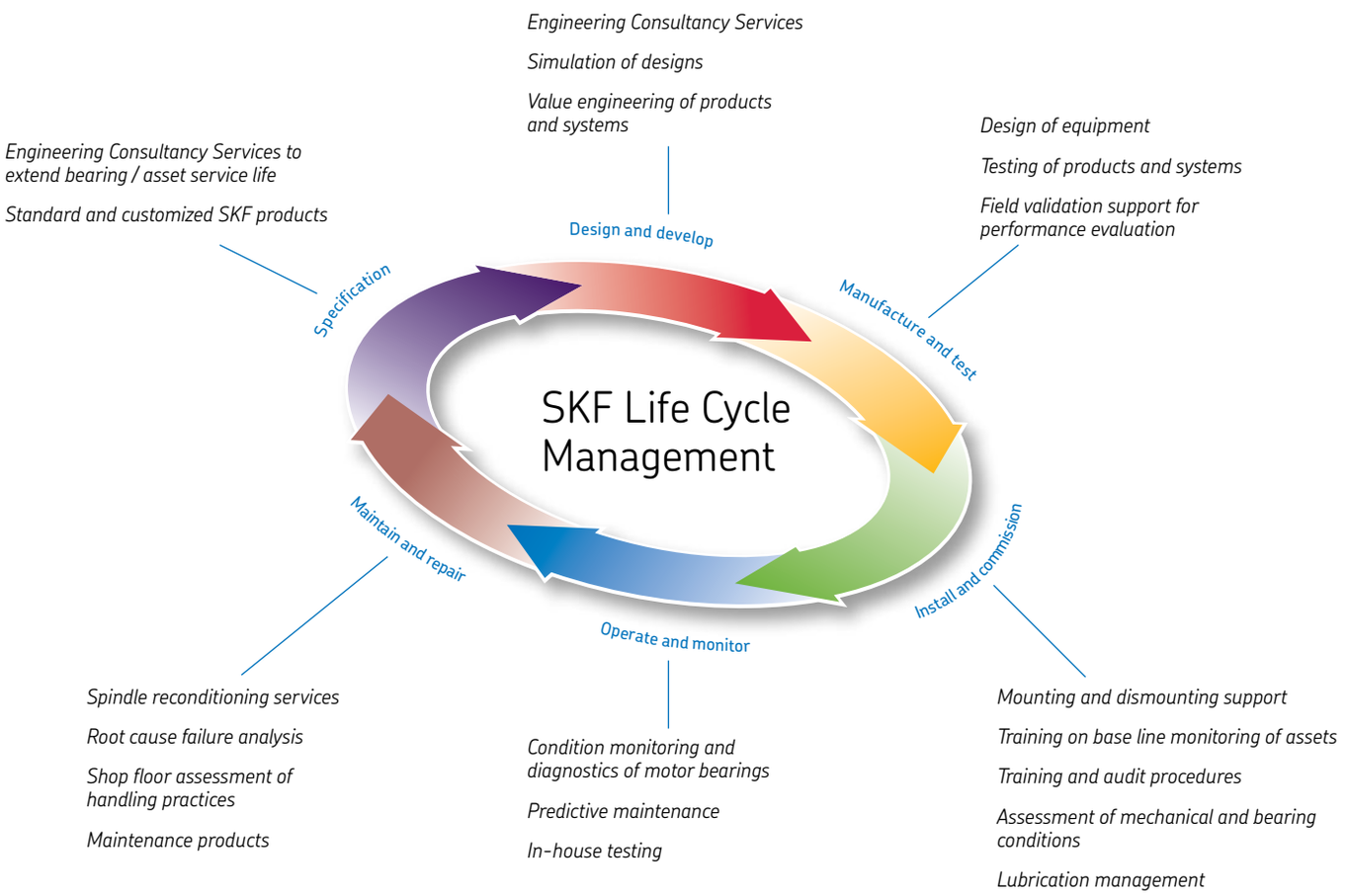


The most demanding and testing area in textiles for bearings is the synthetic fibre manufacturing industry. Abrasive chemicals at elevated temperatures coupled with high speed extract the maximum from rotating equipment and its components. Operating at 5 000 rpm, a small unplanned stoppage can lead to heavy production losses, apart from deviation in quality and wastage of resources. Over the years, SKF has been working with several similar industries and has developed solutions extending to this part of the textile industry.

- E2 bearings and low-friction sealed bearing for positorque / TFO spindles
- Bearings and easy-to-install housings with corrosion-resistant coatings
- High capacity and full complement cylindrical roller bearings to extend the performance of crimper rollers
- Case hardened inner ring HA3 spherical roller bearings for the most demanding godet roller applications
- Ceramic roller bearings for high speed winder applications
- Thermally stabilized ball bearings up to 150 °C for tow assembly and dancing rollers
- Sealing solutions to withstand a temperature of 150 °C and above
- Maintenance products to check leaks, mounting and dismounting bearing equipment, automatic lubricators, etc. to avoid costly replacements

SKF Life Cycle Management

At SKF, our aim is to understand your process challenges and develop solutions that can reduce your total cost of ownership. Apart from all the visible cost contributors, SKF solutions are effective in reducing invisible costs. SKF actively engages with its customers and brings in expertise from all corners to benefit them. The phrase, knowledge is power, is aptly demonstrated at each stage. Further to these solutions, SKF is also committed to help you meet your sustainability goals.



Benefits of SKF Life Cycle Management:

Higher efficiency
Maximize output from equipment by extending mean time between failures and solving challenging application problems.

Operator safety
Reduce risk of injuries from repetitive manual tasks, heavy loads, and slippery environments.

Waste reduction
Comply with tough, new environmental regulations by reducing waste, water and lubricant usage, as well as the impact of wash downs on local ecosystems. Increased reliability (reduction in failure) of components reduces the pressure on resources.

Energy savings
Improve efficiency of machinery and auxiliary equipment, from electric motors and pumps to humidification systems. SKF can help you achieve these benefits by drawing upon our expertise with bearings, bearing units, power transmission, sealing and lubrication systems, linear motion technologies, plus a wide range of consulting and reliability services.

Need solutions, think SKF!

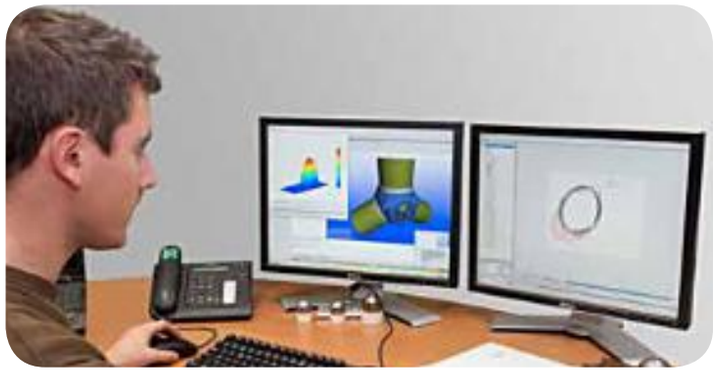


Specification

Working with designers to find the right solution, right from the start

Design and develop

SKF provides integrated, next generation solutions for the toughest application challenges



Manufacture and test

Delivering world-class solutions and validation services globally

Install and commission

Providing expert on-site services, training and auditable procedures

Operate and monitor

Deploy the right solutions at the right time to improve productivity

Maintain and repair

Supporting machinery maintenance and operations with a range of tools and services

High industry-level optimization

SKF has always been at the forefront of new developments and automization. The functions listed below continue to support the optimization programmes at customer end.

SKF Solution Factory

In order to ramp up production, the required production equipment need to be upgraded and maintained. Solution Factory addresses this with spindle services, customization of bearings and machined seals and refurbishing of large size bearings.

Engineering Consultancy Services (ECS)

Redesigning, cost reduction, value engineering, optimizing of designs, checking the limits of performance, etc. are a few of the activities which progressive OEMs / customers undertake endlessly. Innovate or die - aptly describes why the activities are critical for organizational sustenance and market leadership. SKF, with its Engineering Consultancy Services, addresses this very requirement. Many of our customers have benefited from this service and are today leaders in their respective fields.

Training solutions

Apart from solutions that can be offered to create highest reliability, the endevor will remain unfulfilled without training the people handling them. SKF has recognised this at an early stage and is well equipped with a range of training / learning courses which are conducted by experienced trainers at their campus. Right from basics of bearings, seals, lubrication, vibration analysis to very high level segmented trainings are imparted to ensure that customers are equipped with the knowledge needed to get the best out of the equipment.

See inserts for more details about SKF solutions for textile operations.

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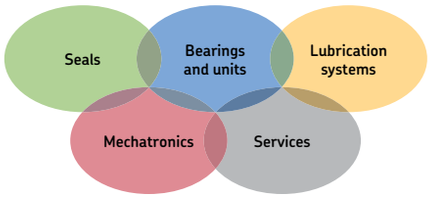

The Power of Knowledge Engineering
Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.

SKF BeyondZero is more than our climate strategy for a sustainable environment: it is our mantra; a way of thinking, innovating and acting.

For us, SKF BeyondZero means that we will reduce the negative environmental impact from our own operations and at the same time, increase the positive environmental contribution by offering our customers the SKF BeyondZero portfolio of products and services with enhanced environmental performance characteristics.

For inclusion in the SKF BeyondZero portfolio, a product, service or solution must deliver significant environmental benefits without serious environmental trade-offs.

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