Take control with SKF solutions for the metals industry

The Power of Knowledge Engineering

than the heat is your competition

Few industrial environments can match the intense operating conditions that are routine in the metals industry. Extreme temperatures. High and low speeds. High torque. Shock loads. Abrasive dust. Aggressive chemicals. Demanding lubrication requirements. Contaminants and humidity that degrade equipment and can force costly unplanned stops.

As if these gruelling conditions were not enough to contend with, metal making facilities now face increased global competition and environmental scrutiny. This has created an urgent need to increase asset effectiveness, reduce cost per tonne and manage the environmental impact of your facility.

SKF can help

With expertise in bearings, services, seals, lubrication systems and linear motion technologies, SKF is able to offer you unique system solutions to help you increase your productivity and reduce your operational costs.

These solutions range from specialized bearing types and sealed, re-lubrication free roller units to high temperature greases and housings that increase the service life of your equipment. In addition, SKF can provide expert consultancy and asset management services, proven condition monitoring technologies, maintenance tools, and training to help you:

- **Increase production**
- **Reduce downtime**
- **Reduce operating and maintenance costs**
- **Improve product quality**
- **Enhance worker safety**
- **Upgrade equipment**
- **Manage environmental impact**

Steelmaking and continuous casting

Trends and challenges

As demand for steel increases, and competition becomes increasingly global, upstream producers' ability to remain profitable will depend on optimizing production capacity and reducing cost per tonne.

To differentiate themselves in a global marketplace, many producers will focus on improved process control, operational flexibility, enhanced product quality and meeting the demand for new and higher grades of steel. Consequently, existing equipment may need to be upgraded.

In addition, as the world becomes more focused on sustainability, the industry will need to examine every aspect of their operation to assure optimal efficiency and reduce environmental impact.

SKF solutions

Drawing on decades of experience in the metals industry, SKF provides a unique system approach to solving steelmaking and continuous casting application challenges. Among these are:

Casters

SKF self-aligning bearing solutions, such as open and sealed spherical roller and CARB toroidal roller bearings, virtually eliminate the problem of induced axial loads resulting in increased service life and greater reliability.

Self-contained, re-lubrication free roller units, called SKF ConRo, can increase roll service life by 25 % and cut operational costs per roll line by as much as 50 %.

Fans

Integrated SKF solutions for fans include specialized bearings, seals, lubrication, alignment and condition monitoring equipment and services. These solutions help extend Mean Time Between Failures (MTBF) and reduce unplanned stops resulting in increased productivity.

Converters

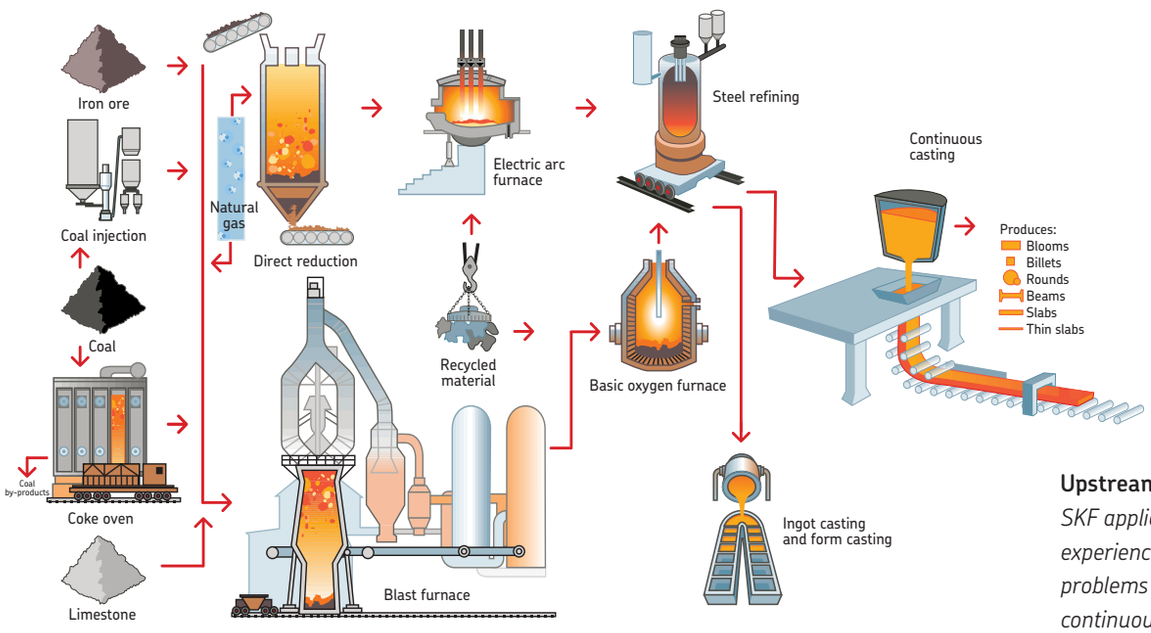
SKF specialized housing and self-aligning bearing solutions for the steel making processes, including seals, effective mounting tools and maintenance services, provide greater plant reliability.

Monitoring

On-line load, temperature, and vibration measurement results in improved operational control resulting in enhanced product quality and advanced notice of failures.

Asset management services

Consultancy and reliability services optimize overall equipment effectiveness, reducing downtime, maintenance, and life cycle costs.



Upstream

SKF applies decades of industry experience to solving application problems common to converters and continuous casting operation.

Rolling mills

Trends and challenges

Hot and cold rolling mills are under pressure to increase output while maintaining and even improving quality of finished product. Demand for new and higher quality steels means adapting equipment for higher torque applications or significant capital investment to reconfigure mill stands.

The need to increase rolling speed is placing new demands on existing equipment, with understandable impact on maintenance requirements and related costs. To optimize both production and quality, operators are focused on improving process control at every stage.

In addition, increasing environmental regulations require documented procedures for grease disposal, mill cleaning, and water treatment. Particularly in hot rolling mills, these costs can be significant. In fact, water-cleaning costs are typically higher than the cost of the lubricants themselves.

SKF solutions

With industry-leading expertise in bearings, services, seals, and lubrication systems, SKF can provide integrated solutions that result in greater reliability and uptime. A few examples include:

Sealed bearings

Sealed four-row tapered roller bearings are a superior solution, reducing lubricant consumption and costs for disposal and water treatment.

Automatic lubrication

Oil-circulating lubrication systems provide constant flow and pressure level, reducing the risk of lubricant starvation that can lead to premature failure and unplanned stops.

Sealing

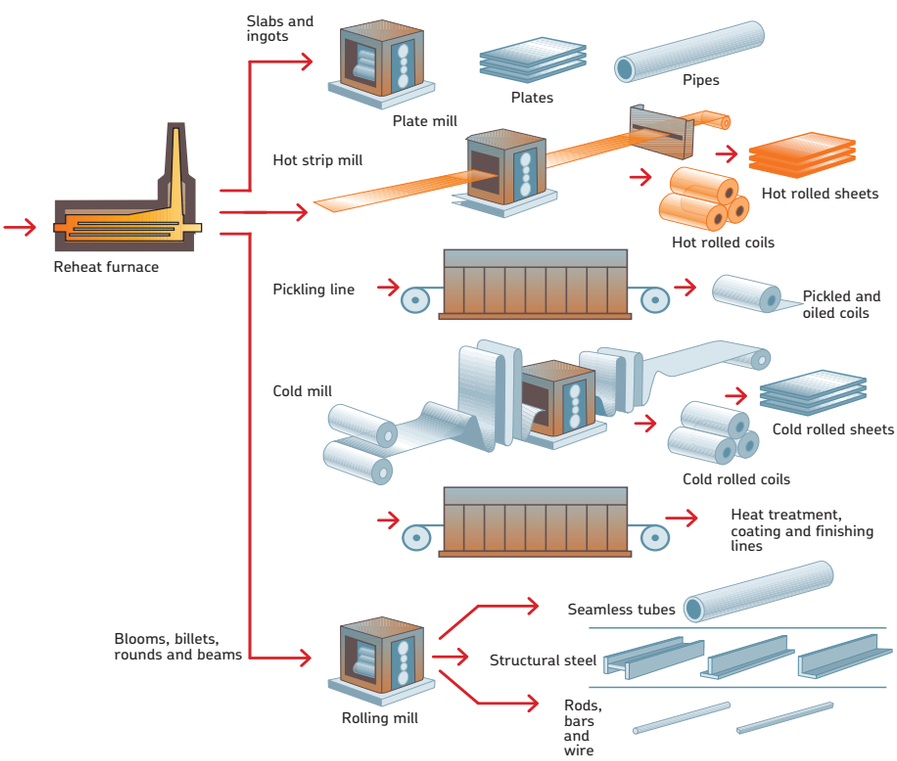
Large diameter seals designed to withstand the most hostile environments protect your machinery and reduce your costs by retaining the lubricant and reducing the risk of contamination.

Condition and operational monitoring

Integrated on-line load, temperature, and vibration monitoring and conducting root cause analysis can improve operational control of the rolling process, enabling early diagnosis of chock failures and problems caused by machinery chatter.

Bearing life cycle management services

An application-based programme combining SKF expertise and technologies can help you reduce life cycle cost and increase machine reliability.



Downstream

SKF solutions for rolling mills support faster rolling speeds and safeguard the quality of the final product.

Equipment design

Trends and challenges

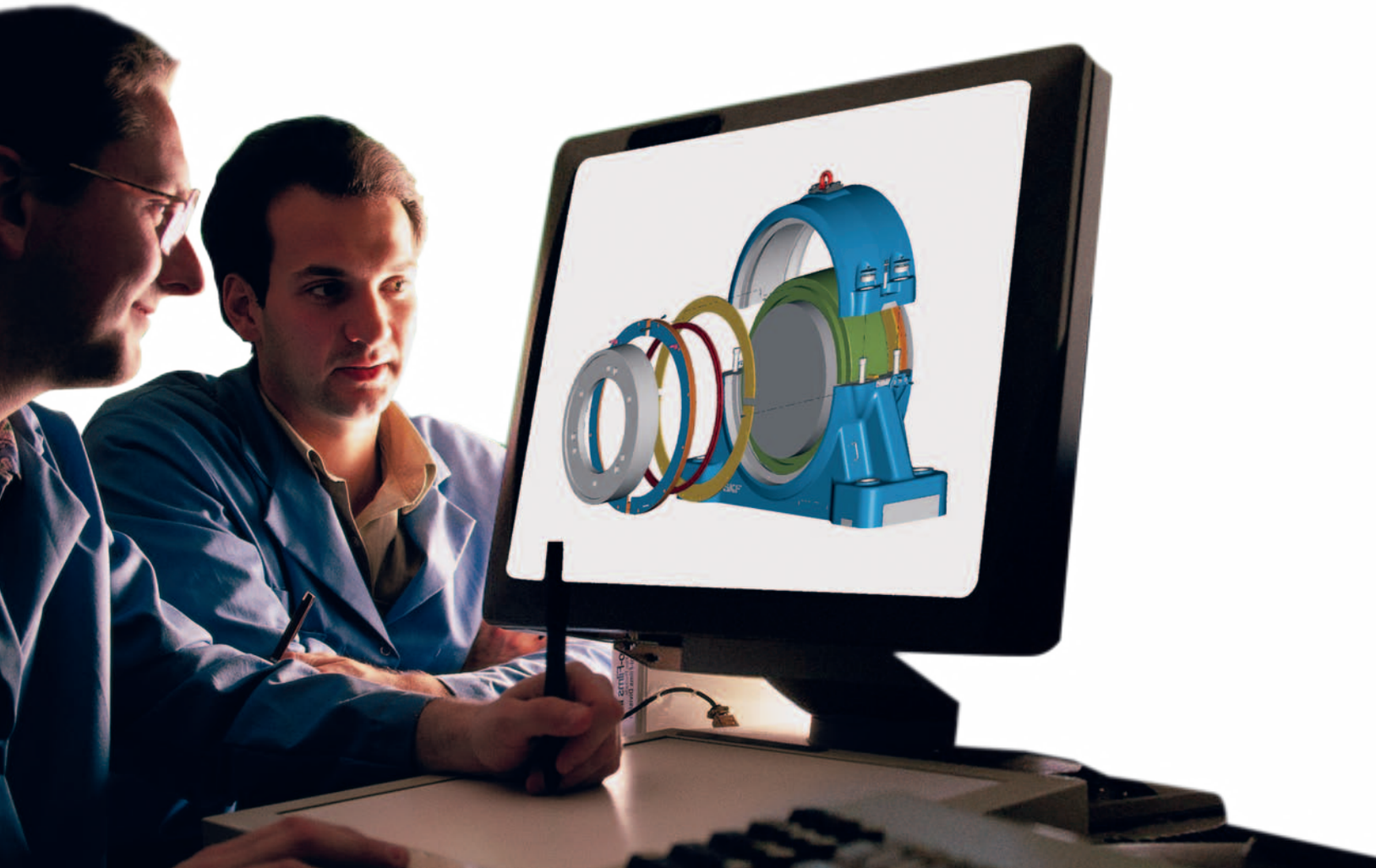
Whether building equipment for continuous casting or rolling mill operations, manufacturers are challenged to meet customer expectations for high quality equipment that is more reliable, less maintenance-intensive, and more flexible to the demands of the diverse metals industry.

SKF solutions

With decades of experience with metals industry customers, SKF brings a unique understanding of the applications and challenges to the table. With expertise in bearings and units, seals, and lubrication systems, we are able to take a systems approach to design, providing complete solutions that improve equipment reliability.

Using advanced simulation software, SKF engineers enable OEM designers to optimize equipment design while still in the prototype stage, and explore the merits of various design options with a virtual test rig that simulates bearing performance under a variety of conditions. Benefits include:

- **Reduced total cost**
- **Reduced machinery development time**
- **Greater flexibility**
- **Faster delivery times**
- **Improved reliability**
- **Reduced need for maintenance**



See inserts for more details about SKF solutions for the upstream and downstream metals industry and auxiliary equipment.

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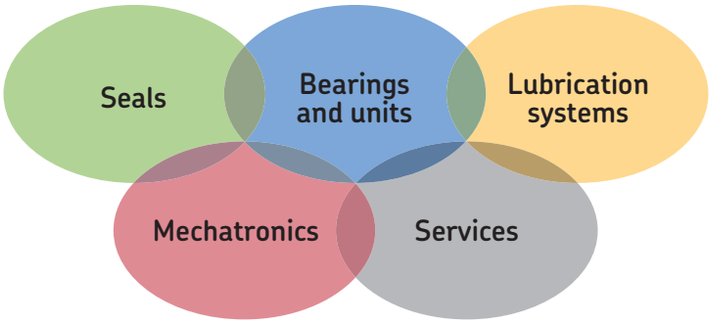

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Drawing on five areas of competence and application-specific expertise amassed over 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management services. A global presence provides SKF customers uniform quality standards and universal product availability.

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