



SKF Integrated Maintenance Solutions

Long-term collaboration for sustainable asset
performance improvement





Investing in an enterprise-wide asset management programme? Share the risks with SKF.

The alternative to in-house maintenance or full outsourcing

The basis of an SKF Integrated Maintenance Solution (IMS) agreement is a partnership where SKF is responsible for creating and implementing your asset management strategy with the ultimate goal of increasing the reliability and profitability of your plant. With an IMS agreement, SKF becomes an integral part of your operational team. We supply bearings, seals and lubricants and manage the maintenance of your machinery. We collaborate with you, combining our in-depth experience and expertise in asset management and knowledge of rotating equipment to reduce the Total Cost of Ownership of your assets.

Collaborative asset management

The on-site team, consisting of your staff and our experts, provides the services and support best suited to optimize the effectiveness of your plant's physical assets. This means you can focus on what you do best: achieving your production goals.

The typical term of an IMS agreement is three to five years, however, as your partner, we anticipate an ongoing relationship. Generally, an IMS includes a defined cost structure and agreed-upon performance measures. Each agreement is different, customized to your specific business goals and needs and complementing your internal resources. All services are delivered under a monthly service fee, with a performance component if SKF exceeds the established objectives. If we fail to help you achieve your goals, we will rebate a portion of our fee.

Risk sharing programme

We share the risk as well as some of the reward. You receive agreed-upon financial returns and technology upgrades without having to tie up capital in inventory or asset management technologies. With SKF as your partner, you achieve your business goals with the least amount of financial risk.



“We don’t manage for costs, we manage for reliability; low costs will be a consequence. The results of the collaborative effort are outstanding.”

Luis Piotto, Engineering and
Maintenance Manager, Veracel

Benefits at a glance

- Increase machine reliability and uptime
- Manage Total Cost of Ownership and control your maintenance costs
- Upgrade maintenance, operations, reliability and craft skills
- Avoid capital expenses for inventory and technology
- Ensure timely supply and control your costs for MRO components
- Leverage SKF engineering resources

An SKF Integrated Maintenance Solution agreement is customized to meet your current needs and flexible enough to accommodate changes in your business. You can choose which areas you want included, based on internal resources and your current supplier situation.

Ideally, an IMS brings together all areas of expertise offered by SKF, beginning with a maintenance strategy review and establishing a continuous process of maintenance improvement. As part of the programme, skills are transferred to existing maintenance and operations personnel, and technology upgrades are provided where required.

Quantifiable results

We guarantee results.

An SKF Integrated Maintenance Solution is a performance-based contract; therefore, the fees paid to SKF depend, in part, on the mutually agreed-upon business results achieved. Efficient utilization of resources produces positive results that impact finances, employee safety and environmental preservation.

SKF Integrated Maintenance Solution:

A flexible programme for optimized plant asset efficiency and effectiveness.

An SKF Integrated Maintenance Solution agreement draws on core competencies in machine design and diagnostic engineering to increase machine reliability and improve plant profitability. The following elements are customized to create a comprehensive programme to attain measurable, ongoing improvement goals.

Assessment



The programme begins with a detailed assessment of your current maintenance practices and a mapping of your MRO components usage. Key improvement opportunities are identified that later become the basis for establishing key performance indicators. Upon agreement to the plan, SKF personnel are selected and assigned to work on-site, complementing and strengthening existing maintenance and technical skills and providing a link to other SKF technical resources.

Maintenance Strategy Review



To assure that the appropriate maintenance efforts are focused, we first need to understand your business goals and assess areas of criticality. From these criteria, we jointly select the proper planned and predictive maintenance tasks and operator inspections to mitigate financial, safety and environmental risks. We also use the strategy review results to analyze spare parts and inventory management requirements.

Trouble-free supply



A key goal of an IMS contract is to first control and then reduce costs associated with purchasing, supply and inventory management. Working in close partnership with your SKF Authorized Distributor, SKF can manage this function as it applies to equipment maintenance, assuring availability of parts when needed, without tying up valuable capital in inventory.

Proactive Reliability Maintenance



Through a defined process including best practice predictive maintenance activities, the root causes of failures are systematically diagnosed and proactive steps are taken to eliminate their recurrence. This process includes setting and using key performance indicators and regular operational reviews to monitor improvements toward benchmarks for your industry.

Technology upgrades



Part of every contract is the utilization of new technologies for improving machine performance and reliability. This may include redesign of your machines with our latest technology, improved lubrication methods and systems, use of the latest periodic and on-line condition monitoring tools and decision support systems – all with low or no capital investment.

Machine maintenance

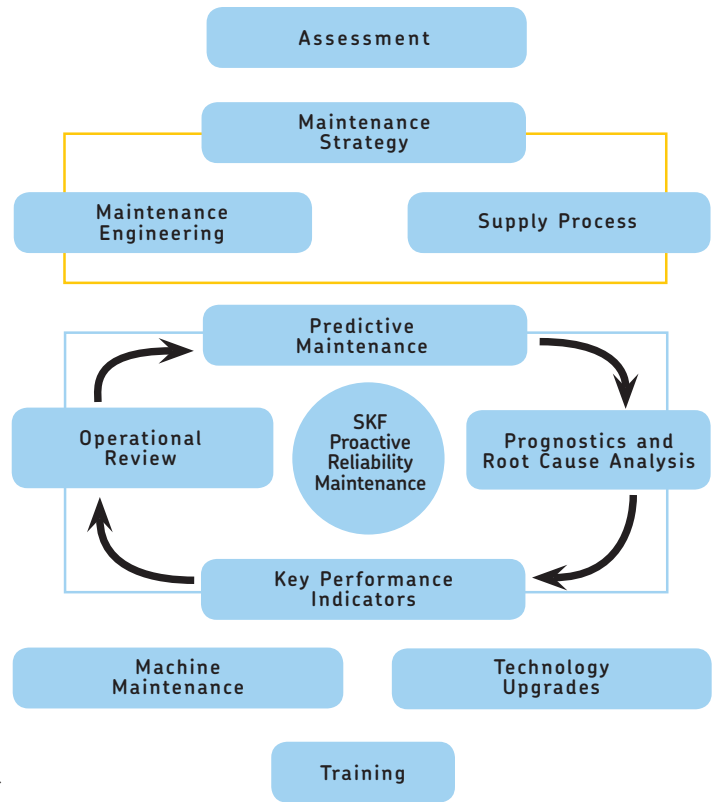


Precision maintenance tasks are supervised or performed by experienced SKF engineers to optimize results. Machine repairs are made using proven techniques supported by sophisticated SKF tools, including precision laser alignment, balancing, expert bearing installation and dismounting and advanced lubrication systems.

Training



An IMS contract keeps your staff current with global best practices. Training courses are customized to the specific needs of your team and designed to transfer the knowledge necessary to sustain the improvements. Training includes precision maintenance skills, bearing care, condition monitoring methods, lubrication practices, root cause failure analysis, maintenance management and more.



Team up with one of the world's most experienced machine reliability experts: SKF

If you want something done right, do it yourself. Right? Well, not necessarily.

For many facilities, an SKF Integrated Maintenance Solution is the best approach to implementing an enterprise-wide asset management programme, in that it allows them to accomplish the same objectives while reducing risk and capital outlay.

An SKF Integrated Maintenance Solution is backed by almost 100 years of experience and knowledge of rotating machine reliability that is unmatched in the world. Close working partnerships with our clients have given us a unique and intimate understanding of the processes and challenges specific to every major industry, from paper, power and petroleum – to metals, mining and food processing. And as a technical partner to original equipment manufacturers worldwide, we likely have had a role in the design of the machinery in your plant.

With SKF, your Integrated Maintenance Solution benefits from the knowledge of some of the world's most experienced machine reliability specialists. These individuals are working in this highly specialized field on a daily basis, eliminating the learning curve that your plant's own staff would need to overcome.

Making the business case for management

To assist you in justifying reliability initiative spending, SKF will prepare a detailed business case for an IMS agreement, based on your objectives and the results we have documented with other companies in your industry. Because we understand your business, we will help you identify the areas most likely to produce a financial payback, and quantify your potential return on investment.

Proven results worldwide

SKF Integrated Maintenance Solutions have produced dramatic returns on investment for many types of industrial facilities around the world. With documented payback periods of less than one year in many cases, these performance-based contracts are increasingly being recognized as a viable alternative to quickly achieve effective asset management. A sampling of case histories is highlighted at right.



Pulp and paper industry

Over 100 hours of unplanned downtime in one year led a large integrated paper mill to enter into an IMS agreement with SKF. The mill agreed that SKF should first conduct a detailed mill-wide assessment to identify opportunities to optimize asset efficiency, reduce the unplanned mechanical downtime, and increase overall productivity. The resulting five-year performance-based contract included:

- Supply and installation of on- and off-line condition monitoring systems
- A staff of reliability engineers, lubrication engineers and maintenance technicians
- Specialized diagnostic support from two SKF support centers
- Application engineering support
- Assistance with precision alignment and balancing
- Maintenance staff training
- Bearing, lubricant and seals supply and inventory management

Results

In four years, the contract generated tangible results for the mill. Incremental production increased, due to decrease in unplanned downtime, by 9 506 metric tons, translating to a \$5 870 000 bottom line increase. In addition, expenditure of \$470 000 on oil analysis, training, applied engineering and new lubricant was avoided. Additional progress in meeting the Key Performance Indicators led to the expansion of the contract's scope in the middle of the original five-year contract.

Food industry

A multi-site Latin American dairy producer desired to implement a proactive maintenance strategy to increase availability and improve practices. The company was performing planned and reactive maintenance but unplanned stops were costing thousands of dollars in lost milk production and required additional maintenance resources to perform the extra work. Management wanted a single supplier able to offer a range of solutions for all facilities.

The SKF IMS agreement provided Proactive Reliability Maintenance services; bearing, seal and lubricant supply for all nine facilities; vibration and oil analysis and root cause failure analysis. SKF bearing, seals and lubricant solutions enabled the client to increase bearing life, while exceeding strict cleanliness requirements. To ensure sustained improvement, SKF performed more than 180 hours of staff training.

The increased reliability and availability helped to achieve an increase of 30 % in production, since the activities with SKF began.

Results

- Extended Mean Time Between Repairs by three times in a critical bearing application
- Reduced oil consumption by 18 %
- Reduced assets in alert by 70 %
- Extended the proactive strategy to other plants
- Eliminated administrative tasks to purchase bearings, seals and lubricants
- Reduced bearings and seals inventory by 27 %
- Reduced bearings and seals consumption by 30 % in six months for one of the plants
- Reduced rotating equipment unplanned downtime to zero hours in the main continuous process for dry milk

For more information on how a collaborative programme could enable you to optimize machine assets without capital outlay, contact your SKF representative, or visit us on-line: www.skf.com/reliability.



® SKF is a registered trademark of the SKF Group.

© SKF 2006

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

Publication **6269 EN**

Printed in Sweden on environmentally friendly paper.

