

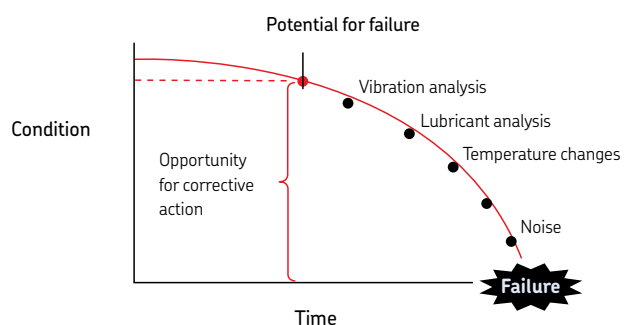


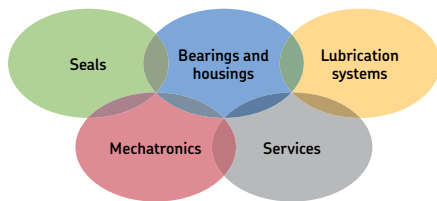
Basic condition monitoring

Includes temperature, sound, visual inspection, speed, electrical discharge and vibration measuring instruments

During operation, it is important to regularly inspect the condition of the bearing by performing basic condition monitoring measurements. These regular inspections will allow the detection of potential problems and help to prevent unexpected machine stops. Consequently, the machine maintenance can be planned to suit the production schedule, increasing the plant's productivity and efficiency.

Condition based maintenance has been known as "Predictive Maintenance Philosophy" which is the process of determining the condition of machinery while in operation. This enables the repair of problem components prior to failure. Using SKF basic condition monitoring instruments not only help plant personnel reduce the possibility of catastrophic failure, but also enhance plant planner person to reduce unnecessary wasting time on planning equipment maintenance by allowing them to order parts in advance, schedule manpower, and plan other repairs during the downtime.





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 Australia Pty Ltd – 17-21 Stamford Road, Oakleigh, Victoria 3166

NSW state office

Unit 1/364 Woodpark Road
Smithfield, NSW 2164
Tel: (02) 9725 9260

QLD state office

7/12 Navigator Place
Hendra, QLD 4011
Tel: (07) 3853 1900

SA state office

Unit 1, 29 Holland Street
Thebarton, SA 5031
Tel: (08) 8354 3078

VIC state office

17-21 Stamford Road
Oakleigh, VIC 3166
Tel: (03) 9269 0800

WA state office

463 Orrong Road
Welshpool, WA 6106
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SKF Australia – Authorised Distributors

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NT

Applied Fluid Centre & Branch

101 Pruett Road
Berrimah, NT 0828
Tel: (08) 8947 1855

SKF New Zealand – Authorised Distributors

North Island

Applied Industrial Technologies

67 Lady Ruby Drive
East Tamaki
Auckland 2013
Tel: (09) 274 0056

Applied Industrial Technologies

47 White Street
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Applied Industrial Technologies 4-6

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Dunedin 9012
Tel: (03) 455 5652

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SKF Australia PTY LTD

Phone: 1300 553 386

e-mail: info.reliabilitysystems@skf.com

<http://www.skf.com/au/services>





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SKF Technology Solutions for optimising the bearing life cycle

... to reduce maintenance
and energy costs!



Every bearing has a pre-calculated service life. However, research has shown that, for various reasons, not every bearing achieves it. Important stages which have a major impact on a bearing service life can be recognised during the bearing's life cycle. These stages are mounting, lubrication, alignment, basic condition monitoring and dismounting.

The stages in a bearing life cycle are extremely important for achieving the maximum service life of the bearing. By applying the right maintenance practices and using the correct tools, you can considerably extend your bearing's service life and increase plant productivity and efficiency.

...hence reduce your overall cost!



Dismounting

Includes pullers, both mechanical and hydraulic, induction heaters and hydraulic equipment

At some point, the bearing will reach the end of its service life and will have to be replaced. Although the bearing may not be used again, it is extremely important to dismount it correctly so that the service life of the replacement bearing is not compromised. Firstly, the use of proper dismounting methods tools will help prevent damage to other machine components, such as the shaft and housing, which are often re-used. Secondly, incorrect dismounting techniques can be hazardous to maintenance personnel.



TMIP Series



Mechanical pullers
TMMA series



SKF Oil Injection Method



Mounting

Includes mechanical fitting tools, induction heaters and hydraulic equipment

Mounting is one of the critical stages of the bearing's life cycle. If the bearing is not mounted properly using the correct method and tools, the bearing's service lifetime will be reduced. Individual applications may require mechanical, heat or hydraulic mounting methods for correct and efficient bearing mounting. Selecting the correct mounting technique for your application will help you extend your bearing's service life and reduce costs resulting from premature bearing failure, as well as potential damage to the application.



Induction Heaters TIH Series





Automatic Lubricators
System 24-LAGE Series



Single Point Lubricators
TLMR Series

Lubrication

Includes bearing greases, manual and automatic lubricators and lubrication accessories

Correct bearing lubrication is an essential step in reaching the bearing's service lifetime. It is important to select grease suitable for the bearing's application, and to apply the correct quantity before commissioning the bearing. During operation, the bearing will require periodic relubrication. The right quantity of the right grease applied at the right intervals is essential to achieving optimum bearing performance and maximum service life. Using manual relubrication methods is common practice; however, continuous relubrication offers many advantages. Continuous relubrication can be performed by using automatic lubricators, which provide a more consistent, correct and contamination-free grease supply.



Lubricants



Wireless Shaft Alignment
TKSA 41

Alignment

Includes shaft and belt alignment tools
and machinery shims

After the bearing has been mounted in an application such as a motor connected to a pump, the application should be aligned. If the application is not properly aligned, the misalignment can cause the bearing to suffer additional load, friction and vibration. These can accelerate fatigue and reduce the bearing's, as well as other machine components, service life. Furthermore, increased vibration and friction can significantly increase energy consumption and the risk of premature failures.



Pulley Aligner
TKBA 40



Pulley Aligner
TKBA 10 / 20



SKF Shim Kits
TMS Series



Vibration

Abnormal vibrations are often the first indication of a potential machine failure. These vibrations can be caused by such conditions as unbalance, misalignment, looseness of parts, rolling element bearing and gear damage. Vibration analysis instruments can help detect many serious problems at an early stage, allowing remedial work to be undertaken in a timely manner.



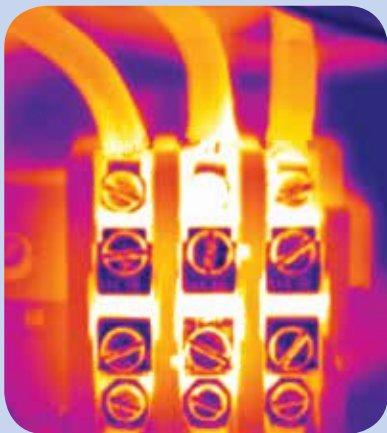
SKF Machine Condition Advisor
CMAS 100-SL



SKF Machine Condition Indicator
CMSS 200 Series

Temperature

Since the dawn of the industrial age, operators and technicians know that abnormal temperatures often indicate that something is wrong with the machine. Such instruments as contact and infrared thermometers can help find and then measure these hotspots, allowing further analysis to be conducted.



SKF Infrared Thermometers
TKTL Series



Thermal Camera
TKTI Series



Sound

Abnormal sounds from machines often indicate that something is wrong. A stethoscope can be used to help pinpoint the source of the sound and can aid the technician in identifying the problem. Leaks in compressed air systems are costly, not only in energy costs but also due to extra costs in air compressor maintenance. Ultrasonic leak detectors can help detect leaks efficiently, allowing the necessary repairs to be made. Excessive noise can cause worker fatigue, increased accidents and loss of hearing. A sound pressure meter can measure the sound level, allowing corrective measures to be made.



Inspector 400 Ultrasonic Probe
CMIN 400-K



Electronic Stethoscope
TMST 3



Ultrasonic Leak Detector
TMSU 1



Visual Inspection

Visual inspection of a machine's condition can sometimes be difficult when it's running or when there is a need to inspect the machine internally. A stroboscope can be used to visually freeze the motion of a machine to allow such things as fan blades, couplings and belt drives to be inspected while running. To inspect the internal parts of a machine often requires disassembly. By using an endoscope, it is possible to access the area of interest with minimal disassembly, saving time and money.



SKF Endoscope
TKES 10 Series



SKF Stroboscope
TKRS Series



Electrical discharge currents

Electrical discharges are a result of motor shaft voltages discharging to earth through the bearing, causing electrical erosion, lubricant degradation and ultimately bearing failure. An electrical discharge detector can help detect the presence of electrical discharge currents, allowing remedial action to be taken.



SKF Electrical Discharge Detector Pen
TKED 1