

## CONDITION MONITORING

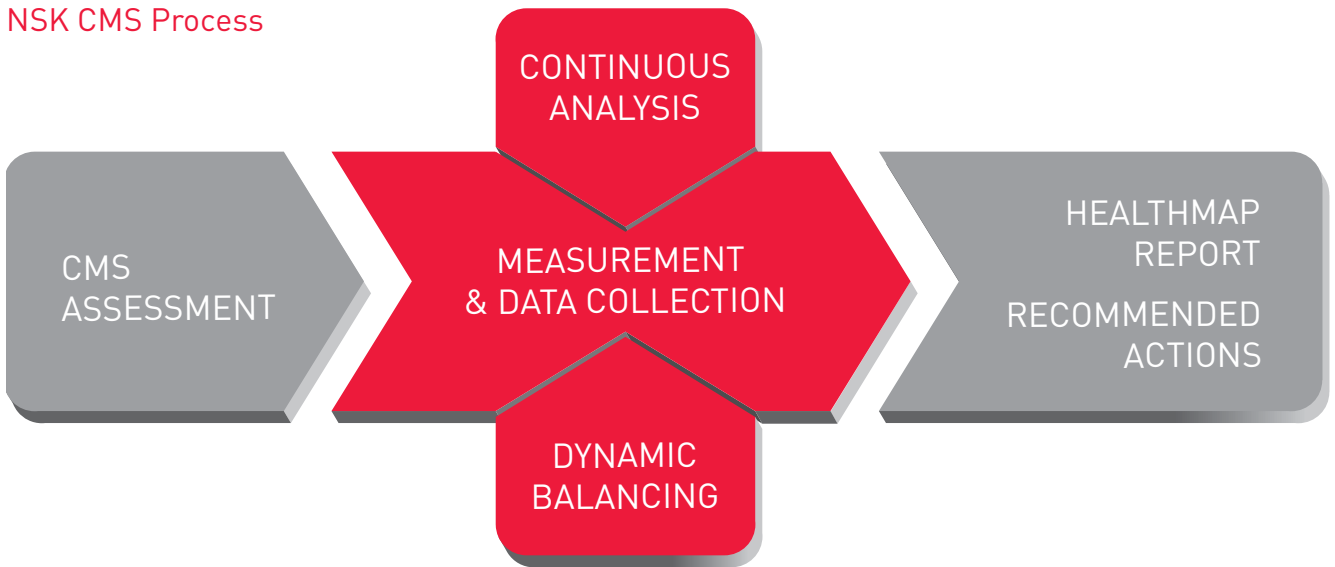
INCREASE THE UPTIME OF YOUR MACHINES



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# NSK's Condition Monitoring Services (CMS)

## NSK CMS Process



NSK employs a consistent process to its Condition Monitoring Service. This ensures that all equipment is assessed for suitability to ensure that CMS results will give you the maximum benefits. Working closely with NSK will help you to tailor your maintenance schedule to achieve optimum machine performance.



### 1. CMS Assessment

Using NSK Mapping Tools to define the monitoring route



### 3. Data Analysis

NSK performs detailed analysis and the data to check machinery health



### 2. Data Collection

Vibration, temperature and speed data collected using NSK equipment



### 4. Reporting

NSK delivers a full CMS report showing a machinery health map, analysis and recommendation

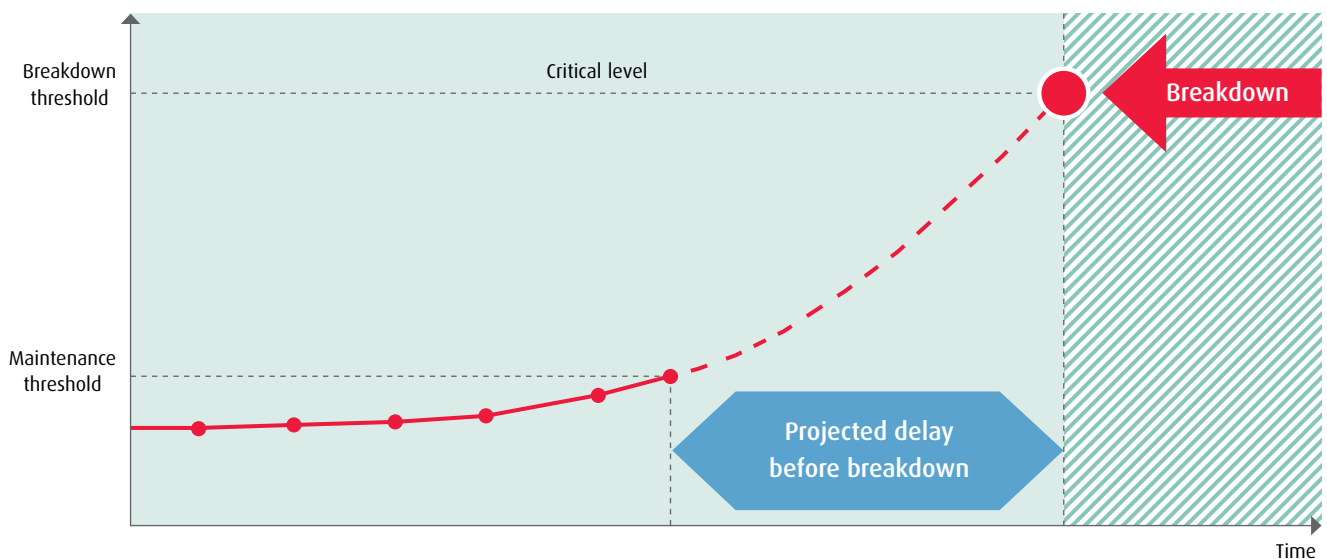
# Services

## Condition Monitoring

is a recommended technique to ensure your machines are integrated into a reliability centered maintenance program. In most cases a periodic analysis is recommended. With this method NSK experts will prepare a monitoring route with all measurement points defined and labeled. They will also give a recommendation for the frequency of measurement. This allows a machinery trend history to be set up allowing an accurate assessment of bearing maintenance requirements. This not only saves money in terms of reduction of unnecessary maintenance operations but also allows a better planning for spares and resource procurement.

In some cases a spot analysis can be implemented to identify existing defects or symptoms. It will pinpoint faults in bearings and related components and aid the target maintenance actions.

## The benefits of periodic CMS



## Out of balance

is one condition that will be highlighted by Condition Monitoring. This can be detrimental to the performance and the lifetime of a machine. NSK experts can utilise their monitoring equipment to perform a full dynamic balancing correction. This is a 3-stage-process and normally requires the addition or subtraction of weight to the machine rotor and a re-assessment of the unbalanced magnitude. This is particularly useful for pump or fan applications, where there are large rotating masses.

## Reduced Maintenance Costs

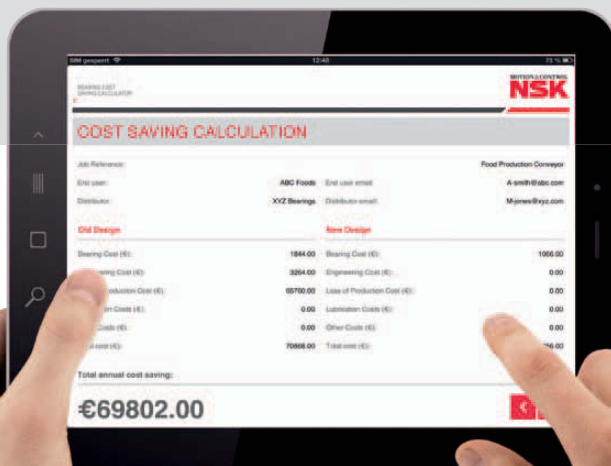
NSK Condition Monitoring Service is a real opportunity to save money in your plant. A typical maintenance budget can range between 15 to 40% of annual turnover having a major effect on profitability.

NSK performs a comprehensive survey of your plant before conducting condition monitoring. This allows a thorough calculation of your machine criticality considering maintenance complexity, contribution to line performance and bearing content. This results in the right predictive maintenance strategy being applied. NSK can apply a number of techniques from its AIP portfolio including critical spares planning, bearing application analysis, user training, dynamic balancing, lubrication solutions and laser alignment. All of this is complemented by NSK's Condition Monitoring Service which oversees machinery health.

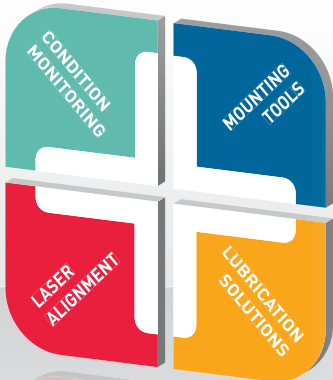
**€ 69802.00**

### CMS Cost Saving Example

A large manufacturer of Metal roll products was experiencing irregular performance on their ingot preparation process. As a critical part of the manufacturing process, this initiated regular maintenance reducing process uptime and increasing costs. NSK reviewed this situation and highlighted an issue with the main oven fan drives. Once identified, NSK triggered a more regular CMS review which allowed the customer to implement a predictive maintenance regime with the necessary NSK spares and resource, choosing the optimum timing to minimise effect on production, resulting in an overall cost reduction.



# The complete bearing care package

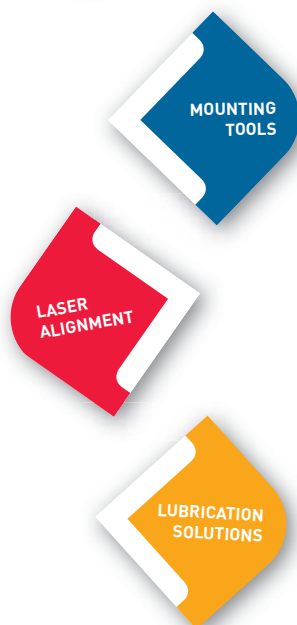


NSK focuses on the care of your bearings with the comprehensive aip+ package. The different maintenance and service tools will give you support for optimum machine performance resulting in life long operation.



## Condition Monitoring

NSK's Condition Monitoring Service keeps track on the pulse of your machine, providing the best health check for running machinery.



## Mounting Tools

NSK's range of bearing tools ensures that all components are handled correctly without damage. Having the correct tools for the job ensures that machines are assembled and dismantled correctly and efficiently.

## Laser Alignment

NSK's alignment tools minimise losses and ensure your machine gives optimum performance with the lowest energy. Over 50% of machines run out of alignment which causes higher loading resulting in lower overall performance.

## Lubrication Solutions

Keeping your bearings lubricated is essential for extended lifetime. NSK's range of lubricant solutions will help you achieve the best performance.

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