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Condition monitoring and diagnostics of machines — General guidelines

*Surveillance et diagnostic d'état des machines — Lignes directrices
générales*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 5, *Condition monitoring and diagnostics of machine systems*.

This third edition cancels and replaces the second edition (ISO 17359:2011), which has been technically revised.

The following changes have been made:

- reference to the ISO 55000 family of asset management standards has been included;
- power transformers have been added to [Annex A](#) and [Annex B](#);
- [Annex D](#) has been updated;
- the Bibliography has been revised.

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Introduction

This document provides guidelines for condition monitoring and diagnostics of machines using parameters such as vibration, temperature, tribology, flow rates, contamination, power, and speed typically associated with performance, condition, and quality criteria. The evaluation of machine function and condition may be based on performance, condition or product quality.

Condition monitoring forms a vital component of asset management and this document is the parent document of a group of standards which cover the field of condition monitoring and diagnostics. The range of condition monitoring standards are indispensable for the use and implementation of the ISO 55000 family of asset management standards. This document provides general procedures to be considered when setting up a condition monitoring programme for all types of machine, and includes references to other International Standards and other documents required or useful in this process.

An overview of the current status of condition monitoring International Standards is shown in [Annex D](#).

This document presents an overview of a generic procedure recommended to be used when implementing a condition monitoring programme, and provides further detail on the key steps to be followed. It introduces the concept of directing condition monitoring activities towards identifying and detecting symptoms of root cause failure modes and describes the generic approach to setting alarm criteria, carrying out diagnosis and prognosis, and improving the confidence in diagnosis and prognosis, which are developed further in other International Standards.

Particular techniques of condition monitoring are only introduced briefly and are covered in more detail in other International Standards referenced in the Bibliography.