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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19873.3-2019

**Condition monitoring and diagnostics of machines -- Vibration
condition monitoring -- Part 3: Guidelines for vibration
diagnosis**

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Foreword

GB/T 19873 `` Machine Condition Monitoring and Diagnostic Vibration Condition Monitoring " has released or plans to release the following sections.

- Part 1. General;
- Part 2. Vibration data processing, analysis and description;
- Part 3. Guidelines for vibration diagnosis;
- Part 9. Motor diagnostic technology.

This part is the third part of GB/T 19873.

This section is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to ISO 13373-3..2015, Machine Condition Monitoring and Diagnostic Vibration Condition Monitoring Part 3.

Vibration Diagnostic Guide.

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this section are as follows.

- GB/T 2298-2010 Vocabulary for mechanical vibration, shock and condition monitoring (ISO 2041..2009, IDT);
- GB/T 6444-2008 Vocabulary for mechanical vibration balance (ISO 1925..2001, IDT);
- GB/T 11348.1-1999 Measurement and evaluation of radial vibration of rotating shafts of rotating machinery-Part 1. General (ISO 7919-1. 1996, IDT);

--- GB/T 19873.1-2005 Machine condition monitoring and diagnosis Vibration condition monitoring Part 1. General (ISO 13373-1.

2002, IDT);

--- GB/T 19873.2-2005 Machine condition monitoring and diagnosis Vibration condition monitoring Part 2. Vibration data processing, analysis

Analysis and description (ISO 13373-2..2005, IDT);

--- GB/T 20921-2007 Vocabulary for machine condition monitoring and diagnosis (ISO 13372..2004, IDT).

Please note that some elements of this document may involve patents. The issuer of this document is not responsible for identifying these patents.

This part is proposed and managed by the National Technical Committee for Mechanical Vibration, Shock and Condition Monitoring (SAC/TC53).

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Introduction

This section of GB/T 19873 gives a guide to the general methods to be considered when diagnosing machine vibration faults. Available for vibration

Used by practitioners, engineers and technicians and provides useful diagnostic tools. These diagnostic tools include diagnostic flowcharts, process tables, and troubleshooting

Fault table, the information in it provides a basic, logical and reasonable step structured method to diagnose machine-related vibration

problem. But this does not preclude the use of other diagnostic techniques.

GB/T 19873.1 introduces the basic procedures of vibration signal analysis, including. the type and scope of use of sensors, different types of machines

Recommended mounting locations, online and offline vibration monitoring systems, and potential mechanical problems.

GB/T 19873.2 introduces machine diagnostics, including. description of signal conditioning equipment that requires time-domain and frequency-domain technology, and vibration characteristics

In the performance analysis, the most common mechanical operation phenomena or the waveforms and characteristics of mechanical failures are encountered.

This section provides a general guide to a range of machines. Guidance for specific machines is given in other parts of GB/T 19873.

GB/T 19873 does not define the vibration limit. The vibration limit is in GB/T 11348 (all parts) on the shaft and GB/T 6075 (all parts).

Min) Details of non-rotating parts.

Machine condition monitoring and diagnostic vibration condition monitoring

Part 3. Guidelines for vibration diagnosis

1 Scope

This section of GB/T 19873 gives a guide to the general procedures that should be considered when diagnosing the vibration faults of rotating machinery, and is applicable to the vibration industry

Engineers, engineers, and technicians, and provides a practical structured analysis method for fault diagnosis. It also gives a variety of different machine

See fault example.

Note. Guidance for specific machines is provided in other parts of GB/T 19873.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 19251) Mechanical Vibration-Balancing-Vocabulary

1) The revision will be ISO 21940-2.

ISO 2041 Vocabulary for Mechanical Vibration, Shock and Condition Monitoring
(Mechanicalvibration, shockandconditionmonito-
ring-Vocabulary)

ISO 7919-1 Measurement and Evaluation of Radial Vibration of Rotating Shafts of Rotating Machinery Part 1. General (Mechanicalvibrationofnon-
reciprocatingmachines-Measurementsonrotatingshaftsandevaluationcriteria-Part 1. General
guidelines)

ISO 13372 Vocabulary for Condition Monitoring and Diagnosis of Machines-

Vocabulary)

ISO 13373-1 Machine condition monitoring and diagnostics Vibration condition monitoring
Part 1. General (Condition monitoring and

diagnostics of machines - Vibration condition monitoring - Part 1. General procedures)

ISO 13373-2 Machine condition monitoring and diagnostics Vibration condition monitoring
Part 2. Vibration data processing, analysis and description (Con-

dition monitoring and diagnostics of machines - Vibration condition monitoring - Part 2.

Processing,

analysis and presentation of vibration data)

3 terms and definitions

The terms and definitions defined in ISO 1925, ISO 2041 and ISO 13372 apply to this document.

4.1 Vibration measurement

Reliable measurements are a necessary basis for using this section (see reference [1]).

There are generally three types of vibration measurements.

a) Vibration measurements on non-rotating parts, such as accelerometers or speed sensors, for bearing housings, machine housings or machine foundations