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# Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts — General guidelines

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**Descriptors** : rotational motion, vibration, rotation velocity, mechanical testing, rotating electric machines, rotary engines, mechanical transmission systems, bearings, vibration measurement

**Reference number** : **JIS B 0906 : 1998 (E)**

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS B 0906**:1989 is replaced with **JIS B 0906**:1998.
In this revision, the conformity with **ISO 10816-1** has been executed in accordance with the systematization of the corresponding International Standards.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

# Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts — General guidelines

**0 Introduction** This Japanese Industrial Standard has been prepared based on the first edition of **ISO 10816-1** *Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts — Part 1: General guidelines* published in 1995 without modifying the technical contents.

This Standard is a basic document which establishes general guidelines for the measurement and evaluation of mechanical vibration of machinery, as measured on the non-rotating (and, where applicable, non-reciprocating) parts of complete machines, such as bearing housings. Recommendations for measurements and evaluation criteria pertaining to specific machine types are to be provided in additional parts of **ISO 10816**.

For many machines, measurements made on non-rotating parts are sufficient to characterize adequately their running conditions with respect to trouble-free operation. However, there are some machines, such as those containing flexible rotors, for which measurements on non-rotating parts may not be totally adequate. In such cases, it may be necessary to monitor the machine using measurements on both the rotating and non-rotating parts, or on the rotating parts alone. For such machines, the guidelines presented in this Standard are complemented by those given for shaft vibration in **ISO 7919-1**. If the procedures of both standards are applicable, the one which is more restrictive generally applies.

Vibration measurements can be used for a number of purposes including routine operational monitoring, acceptance tests and diagnostic and analytical investigations. This Standard is designed to provide guidelines for operational monitoring and acceptance tests only.

Three primary measurement parameters (displacement, velocity and acceleration) are defined and their limitations given. Adherence to the guidelines presented should, in most cases, ensure satisfactory service performance.

**1 Scope** This Standard establishes general conditions and procedures for the measurement and evaluation of vibration using measurements made on non-rotating and, where applicable, non-reciprocating parts of complete machines. The general evaluation criteria, which are presented in terms of both vibration magnitude and change of vibration, relate to both operational monitoring and acceptance testing. They have been provided primarily with regard to securing reliable, safe, long-term operation of the machine, while minimizing adverse effects on associated equipment. Guidelines are also presented for setting operational limits.

The evaluation criteria relate only to the vibration produced by the machine itself and not to vibration transmitted to it from outside.

This Standard does not include any consideration of torsional vibration.