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

Part 5:

Machine sets in hydraulic power generating and pumping plants

*Vibrations mécaniques — Évaluation des vibrations des machines par
mesurages sur les parties non tournantes —*

*Partie 5: Groupes générateurs de puissance et installations de pompage
hydrauliques*



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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Machine arrangements.....	2
4 Measurement procedures and conditions	7
4.1 General.....	7
4.2 Measurement type	8
4.3 Measurement locations and directions	8
4.4 Measurement equipment	9
4.5 Operational conditions.....	10
5 Evaluation.....	10
5.1 General.....	10
5.2 Criterion I: Vibration magnitude.....	10
5.3 Evaluation zone limits	10
5.3.1 Turbine operating conditions	10
5.3.2 Pump operating conditions	11
5.3.3 Special operating conditions.....	11
5.3.4 Axial vibration	11
5.4 Criterion II: Change in vibration magnitude.....	12
5.5 Operational limits.....	12
5.5.1 General.....	12
5.5.2 Setting of ALARMS.....	12
5.5.3 Setting of TRIPS.....	13
5.5.4 Special operating conditions.....	13
5.6 Supplementary procedures/criteria	13
5.7 Evaluation based on vibration vector information.....	13
Annex A (normative) Evaluation zone boundaries	14
Annex B (informative) Special features of bearing housing vibration of hydraulic machine sets	16
Annex C (informative) Analysis procedure and applied regression technique.....	18
Bibliography	19

Foreword

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 10816 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 10816-5 was prepared by Technical Committee ISO/TC 108, *Mechanical vibration and shock*, Subcommittee SC 2, *Measurement and evaluation of mechanical vibration and shock as applied to machines, vehicles and structures*.

ISO 10816 consists of the following parts, under the general title *Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts*:

- *Part 1: General guidelines*
- *Part 2: Large land-based steam turbine generator sets in excess of 50 MW*
- *Part 3: Industrial machines with nominal power above 15 kW and nominal speeds between 120 r/min and 15 000 r/min when measured in situ*
- *Part 4: Gas turbine driven sets excluding aircraft derivatives*
- *Part 5: Machine sets in hydraulic power generating and pumping plants*
- *Part 6: Reciprocating machines with power ratings above 100 kW*

Annex A forms a normative part of this part of ISO 10816. Annexes B and C are for information only.

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Introduction

ISO 10816-1 is the basic document which describes the general requirements for evaluating vibration of various machine types when the vibration measurements are made on non-rotating parts. This part of ISO 10816 provides specific guidance for assessing the severity of vibration measured at the bearings, bearing pedestals or bearing housings of machine sets in hydraulic power generating and pumping plants when measurements are made *in situ*.

Two criteria are provided for assessing the machine vibration. One criterion considers the magnitude of observed vibration; the second considers changes in the magnitudes. It must be recognized, however, that these two criteria do not form the only basis for judging the severity of vibration. For most machine types it is also common to judge the vibration based on measurements taken on the rotating shaft. Shaft vibration measurement requirements and criteria are addressed in separate documents, ISO 7919-1 and ISO 7919-5.