INTERNATIONAL STANDARD

ISO 10816-4

Second edition
2009-10-01

AMENDMENT 1
2017-08

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

Part 4: Gas turbine sets with fluid-film bearings

AMENDMENT 1

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

Partie 4: Turbines à gaz à paliers à film fluide

AMENDEMENT 1

Reference number
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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.

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 2, *Measurement and evaluation of mechanical vibration and shock as applied to machines, vehicles and structures*.

A list of all parts in the ISO 10816 series can be found on the ISO website.

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

Part 4: Gas turbine sets with fluid-film bearings

AMENDMENT 1

Foreword

Replace the complete text of the Foreword by the following:

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This second edition cancels and replaces the first edition (ISO 10816-4:1998), which has been technically revised. The main changes are:

— clarification that the document applies only to gas turbine sets with fluid-film bearings;

— emphasis on acceptance specifications always being agreed on between the supplier and the purchaser of the gas turbine set prior to installation;

— the addition of provisions for evaluating the vibration of coupled gas turbine sets during transient operation;

— introduction of a new annex providing cautionary notes about the use of constant vibration velocity criteria at low frequencies;

— closer alignment of this part of ISO 10816 with ISO 7919-4.

A list of all parts in the ISO 10816 series can be found on the ISO website.

Introduction

Replace the first sentence by the following:

ISO 20816-1 gives general guidelines for evaluating the vibration of various machine types when the vibration measurements are made on rotating and on non-rotating (and, where applicable, non-reciprocating) parts of complete machines.

Second paragraph

Replace the reference to “ISO 7919-1” with “ISO 20816-1”.

Clause 1, EXAMPLE

Delete “ISO 10816-2 or”.

Replace the listing after the Example by the following:

This part of ISO 10816 is not applicable to the following:

a) aero-derivative gas turbines (including gas turbines with dynamic properties similar to those of aero-derivatives);

NOTE ISO 3977-3 defines aero-derivatives as aircraft propulsion gas generators adapted to drive mechanical, electrical or marine propulsion equipment. Large differences exist between heavy-duty and aero-derivative gas turbines, for example in casing flexibility, bearing design, rotor-to-stator mass ratio and mounting structure. Different criteria therefore apply for these two turbine types.

b) gas turbines with outputs greater than 40 MW and with rated speeds of 1 500 r/min, 1 800 r/min, 3 000 r/min or 3 600 r/min (see ISO 20816-2);

c) gas turbines with outputs less than or equal to 3 MW (see ISO 10816-3);

d) gas turbine driven rotodynamic pumps (see ISO 10816-7);

e) coupled steam turbines and/or generators with outputs less than or equal to 40 MW (see ISO 10816-3);

f) coupled steam turbines and/or generators with outputs greater than 40 MW and speeds of 1 500 r/min, 1 800 r/min, 3 000 r/min or 3 600 r/min (see ISO 20816-2);

g) coupled steam turbines and/or generators with outputs greater than 40 MW and speeds other than 1 500 r/min, 1 800 r/min, 3 000 r/min or 3 600 r/min (although generators seldom fall into this category) (see ISO 10816-3);

h) synchronizing clutches which couple the gas turbine to a steam turbine or generator (see ISO 20816-2);

i) coupled rotary compressors (see ISO 10816-3);

j) gearbox vibration (see this clause);

k) rolling element bearing vibration of any driven equipment.

