Second edition
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Plain bearings — Appearance and characterization of damage to metallic hydrodynamic bearings —

Part 2: Cavitation erosion and its countermeasures

Paliers lisses — Aspect et caractérisation de l'endommagement des paliers métalliques à couche lubrifiante fluide —

Partie 2: Érosion de cavitation et sa contre-mesure

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Contents

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 2, *Materials and lubricants, their properties, characteristics, test methods and testing conditions*.

This second edition cancels and replaces the first edition (ISO 7146-2:2008), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— Adjustment to the ISO Directives, including the replacement of "may" with "can" throughout.

A list of all parts in the ISO 7146 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In practice, damage to a bearing can often be the result of several mechanisms operating simultaneously. The damage can result from improper assembly or maintenance or from faulty manufacture of the bearing, its housing or the counterface against which it operates. In some instances, damage can be caused by a design compromise made in the interests of economy or from unforeseen operating conditions. It is the complex combination of design, manufacture, assembly, operation, maintenance and possible reconditioning which often causes difficulty in establishing the primary cause of damage.

In the event of extensive damage or destruction of the bearing, the evidence is likely to be lost, in which case it is impossible to identify how the damage came about.

In all cases, knowledge of the actual operating conditions of the assembly and the maintenance history is of the utmost importance.

The classification of bearing damage established in this document is based primarily upon the features visible on the running surfaces and elsewhere, and consideration of each aspect is needed for reliable determination of the cause of bearing damage.

Since more than one process can cause similar effects on the running surface, a description of appearance alone is occasionally inadequate in determining the cause of damage. In such cases, the operating conditions need to be considered.

Cavitation erosion dealt with in ISO 7146-1 is treated in this document in more detail.