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# Plain bearings with liquid lubrication — Lubricant supply arrangements and monitoring

*Paliers lisses à lubrification fluide — Equipements de graissage et de surveillance*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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# Foreword

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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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This document was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 3, *Dimensions, tolerances and construction*.

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.


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# Introduction

This document is based on German standard DIN 31692-1:1996.

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# Plain bearings with liquid lubrication — Lubricant supply arrangements and monitoring

## 1 Scope

This document provides requirements and guidance on lubricant supply arrangements and monitoring for liquid-lubricated bearings (plain bearing assemblies) such as those specified in ISO 11687 (all parts).

This document is intended to assist the design of oil-based lubrication systems for hydrodynamic plain bearings mainly to be used in large-scale rotating machinery for power generation, industry and transportation.

This document focuses on the most important requirements and characteristics of lubricant supply arrangements and monitoring for plain bearings. Additional standards such as ISO 10438-1, ISO 10438-2 and ISO 10438-3 would be needed to design complete low-pressure or high-pressure lubrication systems, along with their corresponding components.

Wherever this document specifies a particular form of solution, whether design or operation, different solutions can be selected provided they are justified by engineering assessment or reference to similar systems already in operation.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

## 4 Lubrication arrangements

### 4.1 Self-contained bearings

The low-pressure lubrication of self-contained bearings is ensured by an internal oil reservoir and a supply mechanism, driven by the main shaft rotation. Typical self-contained bearing lubrication supply mechanisms include ring lubrication and viscosity pump lubrication. The lubrication does not require external energy or equipment. The lubricant does not leave the bearing internal reservoir.

### 4.2 Circulated lubrication (forced lubrication)

#### 4.2.1 General

The oil supply of forced-lubricated bearings consists of a closed circulation system. The oil supply in these cases is provided by pumping the lubricant through the bearings. In the supply system, the oil is pumped out of the reservoir, filtered, cooled and controlled at the desired flow rate or pressure before being fed to the machine bearings. For this purpose, a complete oil supply system consists of a reservoir,

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