
**Hydrodynamic plain journal bearings
under steady-state conditions —
Circular cylindrical bearings —**

**Part 2:
Functions used in the calculation
procedure**

*Paliers lisses hydrodynamiques radiaux fonctionnant en régime
stabilisé — Paliers circulaires cylindriques —*

Partie 2: Fonctions utilisées pour le calcul



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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

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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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 8, *Calculation methods for plain bearings and their applications*.

This second edition cancels and replaces the first edition (ISO 7902-2:1998), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- adjustment to ISO/IEC Directives, Part 2:2018;
- correction of typographical errors.

A list of all parts in the ISO 7902 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.

Hydrodynamic plain journal bearings under steady-state conditions — Circular cylindrical bearings —

Part 2: Functions used in the calculation procedure

1 Scope

This document specifies the values of the basic functions used in the calculation procedure for oil-lubricated circular cylindrical hydrodynamic bearings under conditions of full lubrication.

The values are given for the assumptions and boundary conditions given in ISO 7902-1. The values necessary for the calculation can be determined from the tables of bearing characteristics, the graphs and from the formulae.

The descriptions of the symbols used and calculation examples are given in ISO 7902-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7902-1, *Hydrodynamic plain journal bearings under steady-state conditions Circular cylindrical bearings — Part 1: Calculation procedure*

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 Tables of basic bearing characteristics

ISO 7902-1:2020, Table 1 shall be referenced to identify the meaning of the symbols used in this document.

[Tables 1](#) to [30](#) give

- the attitude angle, β ,
- the Sommerfeld number, So ,
- the specific coefficient of friction, taking account of the unloaded area of lubricant film, f'/φ ,
- the specific coefficient of friction in the loaded area of the lubricant film, f/φ , and