
Gear hobs — Accuracy requirements

Fraises-mères — Exigences d'exactitude

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 4468:2020](https://standards.iteh.ai/catalog/standards/iso/ed55c2d2-62f3-4481-81cd-455a9ebf049d/iso-4468-2020)

<https://standards.iteh.ai/catalog/standards/iso/ed55c2d2-62f3-4481-81cd-455a9ebf049d/iso-4468-2020>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 4468:2020

<https://standards.iteh.ai/catalog/standards/iso/ed55c2d2-62f3-4481-81cd-455a9ebf049d/iso-4468-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	2
3.1 Terms and definitions.....	2
3.2 Symbols.....	4
4 Allowable deviations	4
5 Derivation of allowable values	5
5.1 General.....	5
5.2 Tests 1-6, 9, 12, 13 and 14.....	6
5.3 Test 7.....	6
5.4 Test 9A.....	6
5.5 Tests 10.....	6
5.6 Tests 8, 8A, 9B, 11, 11A, 12, 15 and 16.....	6
5.7 Oversize tolerances.....	6
5.8 All tests.....	7
Annex A (normative) Nominal dimensions of general-purpose single-start solid (monobloc) gear hobs with axial keyway or tenon drive of 0,5 to 40 module	30
Bibliography	39

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

ISO 4468:2020

<https://standards.itih.ai/catalog/standards/iso/ed55c2d2-62f3-4481-81cd-455a9ebf049d/iso-4468-2020>

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).

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

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 60, *Gears*, Subcommittee SC 1, *Nomenclature and wormgearing*.

This third edition cancels and replaces the second edition (ISO 4468:2009), which has been technically revised. It also incorporates the Technical Corrigendum ISO 4468:2009/Cor 1:2009.

The main changes compared to the previous edition are as follows:

- oversize tolerances: when the hob outside diameter exceeds the recommended size given in ISO 2490, the standard tolerances shall be increased by a factor of one-half of the percent oversize;
- hob sizes: the standard hob sizes from ISO 2490 were added as [Annex A](#).

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.

Gear hobs — Accuracy requirements

1 Scope

This document specifies requirements for the accuracy of general-purpose hobs of 0,5 module to 40 module.

These hobs are intended for producing gears which conform to ISO 53 and ISO 54.

This document applies to hobs for spur and helical gears. It applies to solid (monobloc) and inserted blade hobs.

The elemental features of hobs are graded according to accuracy, as follows:

- Grade 4A;
- Grade 3A;
- Grade 2A;
- Grade A;
- Grade B;
- Grade C;
- Grade D.

Grade 4A is the highest order of precision.

In addition to the elemental tests for hobs, this document gives permitted tolerances for composite tests that are taken along the cutting edges on the line of action. The two groups of tests are not equivalent and one can choose between one or the other. If there was no previous agreement, the hob is regarded as belonging to the precision class specified if it satisfies one or the other of the two methods of inspection.

NOTE The tolerances in this document were determined for gear hobs whose dimensions conform to ISO 2490, but with certain precautions they can be applied to hobs not specified in this document.

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 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 1122-1, *Vocabulary of gear terms — Part 1: Definitions related to geometry*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1122-1 apply.

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/>

3.1.1

radial runout of hub diameter

total deviation in radial distance of the hub periphery from the axis

3.1.2

axial runout of hub face

total axial deviation of the hub face from a true plane of rotation

3.1.3

radial runout of tips of teeth

total deviation in the radial distance from the axis to the tips of the hob teeth

3.1.4

straightness and radial alignment over cutting depth

angular relationship between the tooth face and a radial line intersecting the tooth face at the hob outside diameter, measured in a plane perpendicular to the axis

3.1.5

adjacent spacing of cutting face of gashes

maximum deviation between any two consecutive cutting face measurements

3.1.6

total spacing of cutting face of gashes

maximum deviation between any two cutting face measurements

3.1.7

gash lead deviation per 100 mm

maximum deviation as the probe contacts the tooth faces within the axial region of the gash

Note 1 to entry: Allowable values for deviations are given per 100 mm of cutting face width.

3.1.8

tooth profile deviation

maximum deviation of the portion of the hob tooth that generates an unmodified involute profile

3.1.9

tooth thickness

normal tooth thickness difference of the actual and reference datum at the reference cylinder

Note 1 to entry: Tooth thickness is negative only.

3.1.9.1

addendum

radial distance between the top of the hob tooth and the reference cylinder.