INTERNATIONAL STANDARD

ISO
1328-1

Cylindrical gears — ISO system of accuracy —

Part 1:
Definitions and allowable values of deviations relevant to corresponding flanks of gear teeth

Engrenages cylindriques — Système ISO de précision —

Partie 1: Définitions et valeurs admissibles des écarts pour les flancs homologues de la denture

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 1328-1 was prepared by Technical Committee ISO/TC 60, *Gears.*

This first edition of ISO 1328-1, together with ISO 1328-2, cancels and replaces ISO 1328:1975, which has been technically revised.

ISO 1328 consists of the following parts, under the general title *Cylindrical gears — ISO system of accuracy:*

— *Part 1: Definitions and allowable values of deviations relevant to corresponding flanks of gear teeth*

— *Part 2: Definitions and allowable values of deviations relevant to radial composite deviations and runout*

Annex A forms an integral part of this part of ISO 1328. Annexes B and C are for information only.

Introduction

Together with definitions and allowable values of gear element deviations, ISO 1328:1975 also provided advice on appropriate inspection methods.

In the course of revising ISO 1328:1975 and taking into account several important aspects, it was agreed that the description and advice on gear inspection methods should be published as Technical Reports and that, together with parts 1 and 2 of ISO 1328, a system of standards and technical reports (listed in clause 2 and annex C) should be established.

Cylindrical gears — ISO system of accuracy —

Part 1:
Definitions and allowable values of deviations relevant to corresponding flanks of gear teeth

1 Scope

This part of ISO 1328 establishes a system of accuracy relevant to corresponding flanks of individual cylindrical involute gears.

It specifies appropriate definitions for gear tooth accuracy terms, the structure of the gear accuracy system and the allowable values of pitch deviations, total profile deviations and total helix deviations.

This part of ISO 1328 applies only to each element of a toothed wheel taken individually; it does not cover gear pairs as such.

It is strongly recommended that any user of this part of ISO 1328 be very familiar with the methods and procedures outlined in ISO/TR 10064-1. Use of techniques other than those of ISO/TR 10064-1 combined with the limits described in this part of ISO 1328 may not be suitable.

Annex A gives formulae for tolerances for tangential composite deviations which are also criterions of ISO quality, but are not mandatory inspection items.

Annex B provides values on profile and helix form and slope deviations which sometimes serve as useful information and evaluation values but are not mandatory inspection items.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 1328. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1328 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/TR 10064-1:1992, *Cylindrical gears — Code of inspection practice — Part 1: Inspection of corresponding flanks of gear teeth.*

3 Definitions

For the purposes of this part of ISO 1328, the following definitions apply.

For the symbols not explained in this clause, see clause 4.

3.1 Pitch deviations

3.1.1 single pitch deviation (f_{pt}): Algebraic difference between the actual pitch and the corresponding theoretical pitch in the transverse plane, defined on a circle concentric with the gear axis at approximately mid-depth of the tooth. (See figure 1.)

3.1.2 cumulative pitch deviation (F_{pk}): Algebraic difference, over any sector of k pitches, between the actual length and the theoretical length of the relevant arc. (See figure 1.) In theory, it is equal to the algebraic sum of the single pitch deviations of the same k pitches.

NOTE 1 Unless otherwise specified, evaluation of F_{pk} is limited to sectors not larger than one-eighth of the circumference. Hence, allowable values of deviations F_{pk} apply to