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**AMERICAN GEAR MANUFACTURERS ASSOCIATION**

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*Cylindrical Gears - Code of Inspection  
Practice - Part 1: Inspection of  
Corresponding Flanks of Gear Teeth*

AGMA ISO 10064-1



**AGMA INFORMATION SHEET**

(This Information Sheet is NOT an AGMA Standard)

American  
Gear  
Manufacturers  
Association

***Cylindrical Gears - Code of Inspection Practice - Part 1: Inspection of Corresponding Flanks of Gear Teeth***

AGMA ISO 10064-1

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**ABSTRACT**

This information sheet provides a code of practice dealing with the tangential measurements of cylindrical involute gear tooth flanks (pitch deviations, profile deviations, helix deviations and tangential composite deviations), and serves as a supplement to ANSI/AGMA ISO 1328-1, *Cylindrical gears - ISO system of accuracy - Part 1: Definitions and allowable values of deviations relevant to corresponding flanks of gear teeth*.

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## Foreword

[The foreword, footnotes and annexes, if any, in this document are provided for informational purposes only and are not to be construed as a part of AGMA ISO 10064-1, *Cylindrical Gears - Code of Inspection Practice - Part 1: Inspection of Corresponding Flanks of Gear Teeth.*]

This document was developed by ISO Technical Committee 60 as a Technical Report with ANSI/AGMA participation. It was first published on 1992-02-01. In general, the information in this Information Sheet covers similar subjects as covered in ANSI/AGMA 2000-A88, *Gear Classification and Inspection Handbook - Tolerances and Measuring Methods for Unassembled Spur and Helical Gears*, that currently exists.

The user of this ISO Information Sheet is alerted that differences exist between it and ANSI/AGMA 2000-A88. Differences include, but are not limited to:

- Measuring methods refer to an accuracy grade numbering system that is reversed, such that the smallest number represents the smallest tolerance;
- Measuring methods refer to tolerances that are established by geometric mean values of relevant ranges of parameters in tables, not by formulas;
- Probe direction for measurements of elemental tolerances may differ from ANSI/AGMA 2000-A88;
- The measurement "profile evaluation range" and "helix evaluation range", where the tolerances are applied, are defined for less flank area than in ANSI/AGMA 2000-A88;
- The measurement of undulations is included;
- Concepts of "mean measurement trace", "design trace", "slope deviation" and "form deviation" are defined.

Therefore, the user of AGMA ISO 10064-1 must be very careful when comparing measurement methods formerly specified using ANSI/AGMA 2000-A88.

This version was approved by the Inspection Handbook Committee on April 16, 1999. It was approved by the Technical Division Executive Committee as an AGMA Information Sheet on May 20, 1999.

Suggestions for improvement of this Information Sheet will be welcome. They should be sent to the American Gear Manufacturers Association, 1500 King Street, Suite 201, Alexandria, Virginia 22314.

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# American Gear Manufacturers Association – Cylindrical Gears – Code of Inspection Practice – Part 1: Inspection of Corresponding Flanks of Gear Teeth

## 1 Scope

This part of the ISO Technical Report constitutes a code of practice dealing with the tangential measurements of cylindrical involute gear tooth flanks, i.e. with the measurement of pitch deviations, profile deviations, helix deviations and tangential composite deviations.

In providing advice on gear checking methods and the analysis of measurement results, it supplements the standard ANSI/AGMA ISO 1328-1.

Most of the terms used are defined in ANSI/AGMA ISO 1328-1, others are defined as they appear in the text and in clause 3.

## 2 References

The following standards contain provisions which, through reference in this text, constitute provisions of AGMA ISO 10064-1. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on AGMA ISO 10064-1 are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 53:1954, *Cylindrical gears for general and heavy engineering – Basic rack.*

ISO 54:1977, *Cylindrical gears for general engineering and heavy engineering – Modules and diametral pitches.*

ISO 701:1976, *International gear notation – Symbols for geometrical data.*

ISO 1122-1:1983, *Glossary of gear terms – Part 1: Geometrical definitions.*

ANSI/AGMA ISO 1328-1, *Cylindrical gears – ISO system of accuracy – Part 1: Definitions and allowable values of deviations relevant to corresponding flanks of gear teeth.*

ANSI/AGMA ISO 1328-2, *Cylindrical gears – ISO system of accuracy – Part 2: Definitions and allowable values of deviations relevant to radial composite deviations and runout.*

ISO/TR 10064-2, *Cylindrical gears – Code of inspection practice – Part 2: Inspection of radial composite deviations, runout, and tooth thickness allowance.*

AGMA 915-3-A99, *Inspection Practices – Gear Blanks, Shaft Center Distance and Parallelism.*

## 3 Symbols and corresponding terms

### 3.1 Gear data

Symbol	Term
$b$	Facewidth
$d$	Reference diameter
$d_b$	Base diameter
$m, m_n$	Normal module
$m_t$	Transverse module
$p_n$	Normal pitch
$p_t$	Transverse pitch
$p_b, p_{bn}$	Normal base pitch
$p_{bt}$	Transverse base pitch
$S$	Number of pitches per sector
$z$	Number of teeth
$\alpha, \alpha_n$	Normal pressure angle
$\alpha_t$	Transverse pressure angle
$\beta$	Helix angle
$\beta_b$	Base helix angle
$\epsilon_\alpha$	Transverse contact ratio
$\epsilon_\beta$	Overlap ratio
$\epsilon_\gamma$	Total contact ratio