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American
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AGMA Information Sheet

Inspection of Molded Plastic Gears

AGMA 905-A17

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Approved May 24, 2017

ABSTRACT

Due to their specification, design, and manufacture, plastic gears have unique issues that can affect the measurement methods and results obtained. This information sheet describes industry accepted practices to inspect molded plastic gears. It identifies the unique characteristics of molded plastic gears that influence the accuracy and/or repeatability of gear measurements.

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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 Information Sheet 905-A17, *Inspection of Molded Plastic Gears*.]

The first draft of AGMA 905-A17 was made in January 2001. It was approved by the AGMA membership in February 2017.

This information sheet was written to provide the plastics gearing community with a resource on how plastic gears are commonly measured. While many of the methods described apply to all gearing, this document provides added information specific to plastic gears.

Suggestions for improvement of this information sheet will be welcome. They may be submitted to tech@agma.org.

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This information sheet is dedicated to Irving Laskin. His inspiration, commitment and contributions to the Plastic Gearing Committee's work over many years helped lead to the development of this information sheet. His thoroughness, enthusiasm and contributions to the Plastic Gearing Committee helped develop this and many other AGMA documents.

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American Gear Manufacturers Association –

Inspection of Molded Plastic Gears

1 Scope

This document describes industry accepted practices to inspect molded plastic gears. It identifies the unique characteristics of molded plastic gears that influence the accuracy and repeatability of gear measurements. This document does not establish a quality classification system or tolerances for plastic gear geometry.

This document describes the equipment commonly used in measuring plastic gears, the measurement techniques that can be employed, and statistical and system analysis issues that can be applied.

1.1 Inspection methods included in this document

The inspection methods described in this document are limited to those specifications that are typically defined on a plastic gear's drawing. These features are described in AGMA 909, *Specifications for Molded Plastic Gears*. Other aspects of gear quality are not considered here such as basic material strength, processing influences on strength, surface appearances, surface texture and the presence of flash.

1.2 Types of gears

Inspection methods described here are limited to the most common types of molded plastic involute gears, namely:

- spur;
- helical;
- cylindrical worm;
- external, internal, and rack forms;
- sector gears.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of the information sheet. At the time of publication, the editions were valid. All publications are subject to revision, and the users of this information sheet are encouraged to investigate the possibility of applying the most recent editions of the publications listed.

AGMA 909-A06, *Specifications for Molded Plastic Gears*

ANSI/AGMA 1012-G05, *Gear Nomenclature, Definitions of Terms with Symbols*

AGMA 915-2-A05, Inspection Practices – Part 2: Cylindrical Gears – Radial Measurements

ANSI/AGMA 2002-C16, *Tooth Thickness and Backlash Measurement of Cylindrical Involute Gearing*

ANSI/AGMA ISO 1328-1-B14, *Cylindrical Gears – ISO System of Flank Tolerance Classification – Part 1: Definitions and Allowable Values of Deviations Relevant to Flanks of Gear Teeth*

ANSI/AGMA 2015-2-B15, *Accuracy Classification System – Radial Measurements for Cylindrical Gears*

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