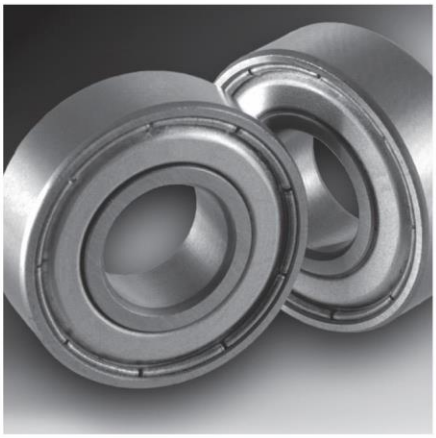

AMERICAN NATIONAL STANDARD

Accredited Standards Committee B3

Tolerance Definitions And Gauging Practices For Ball and Roller Bearings ANSI/ABMA 4:1994

Secretariat

American Bearing Manufacturers Association

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Tolerance Definitions and Gauging Practices for Ball and Roller Bearings

1. Scope

This standard includes:

(1) Terms and definitions of tolerances for the boundary dimensions, running accuracy and internal clearance of ball and roller bearings listed in other ANSI/ABMA and ISO standards.

(2) Description of methods of measuring, which are commonly used by bearing users and which, as a rule, give an accuracy sufficient for practical purposes.

2. Terms and definitions

2.1 General

2.1.1 Applicability of tolerances: The tolerances apply exclusively to the concept of boundary dimensions, running accuracy and internal clearance defined in sections 2.2, 2.3 and 2.4 of this standard.

2.1.2 Absolute dimensions: At a temperature of +20°C (+68°F) and provided that the bearing parts are completely unstressed by external forces, including measuring loads and the gravitational force on the part itself, a boundary dimension of a bearing or bearing part shall not deviate from the nominal dimension by more than the tolerances to be applied. In order to assure correlation between the bearing dimensions and the absolute unit of length, the gauges and measuring instruments shall, at suitable intervals, be adjusted or calibrated by means of master gauges, whose calibration is traceable to those used by the National Institute of Standards and Technology.

2.1.3 Tolerance terms: All specified tolerances apply to the finished bearing or component.

The term "nominal size" (diameter, width, height), "deviation", and "tolerance" conform with those defined in ANSI Standard B4.2, Preferred Metric Limits and Fits. Figure 1 illustrates those and other terms.