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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 24633.1-2024

**Geometrical product specifications (GPS) - Cylindricity - Part 1:
Vocabulary and parameters of cylindrical form**

产品几何技术规范（GPS）圆柱度 第1部分：词汇和参数

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. This document is Part 1 of GB/T 24633 "Geometric Product Specification (GPS) Cylindricity". GB/T 24633 has been published as follows part. Part

1 Scope

GB/T 24633.1-2024 is Part 1 of the Chinese GPS standard on cylindricity, giving the vocabulary and the parameters of cylindrical form. Cylindricity is the deviation that matters most in the components industry actually argues about, bores, journals, pins and shafts, and it is also the one most often measured inconsistently, because the answer depends on which reference cylinder is fitted to the measured points, least squares, minimum zone, maximum inscribed or minimum circumscribed, and on how the surface was filtered and sampled before fitting. The standard fixes all of that in definitions: the basic terminology, the terms relating to the extracted surface, the terms relating to each reference cylinder and the parameters derived from it, the peak, valley and total form deviations and the roundness, straightness and taper components that make up cylindricity. It is the reference the drawing specification and the measurement software must agree on. It took effect on 29 September 2024.

This document defines the terminology and concepts of cylindricity of single component elements. This document applies to the complete cylindrical profile of a single component.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document. ISO 12181

3 Terms and definitions

For this document, the terms and definitions defined in ISO 121811, ISO 127801 and ISO 174501 and the following apply.

3.1 Basic terminology

3.1.1 Cylindricity Properties of a cylinder.

Note. The mathematical definition of the cylindricity tolerance of nominal components is given in Appendix A.

3.1.2 Nominal cylinder A mathematical cylinder defined by design.

Note. The nominal cylinder referred to in this document is an (ideal) cylinder (i.e. the theoretical angle between the cylinder axis and each cross section is a right angle).