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

GB/T 157-2025

Replacing GB/T 157-2001

**Geometrical product specifications (GPS) - Series of conical
tapers and taper angles**

产品几何技术规范（GPS）圆锥的锥度与锥角系列
(English Translation)

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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.

This document replaces GB/T 157-2001 "Technical Specification for Product Geometry (GPS) Cone and Cone Angle Series" and Compared with GB/T 157-2001, the main technical changes are as follows.

- Changed the scope (see Chapter 1, Chapter 1 of the 2001 edition);
- Changed the introductory words of terms and definitions (see Chapter 3, Chapter 3 of the 2001 edition);
- Deleted the term and definition of "conical surface" (see 3.1 of the 2001 edition);
- Deleted the term and definition of "cone" (see 3.2 of the 2001 edition);
- Deleted the term and definition of "cone angle (α)" (see 3.3 of the 2001 edition);
- Deleted the term and definition of "taper (C)" (see 3.4 of the 2001 edition);
- Adjust "The taper and cone angle series of cones for specific purposes" from the appendix to the main text, and add some values (see Chapter 4, 2001 Appendix A of the 2001 edition);
- Added "The dimensions and tolerances of cones shall comply with the provisions of

GB/T 15754" (see Chapter 4);

--- Change "Jacob taper" to "Jagg taper" (see Chapter 4, Appendix A of the 2001 edition).

This document is modified to adopt ISO 1119:2011 "Geometrical Product Specification (GPS) Conicity and angle series of cones".

The technical differences between this document and ISO 1119:2011 and their reasons are as follows.

--- ISO 3040 was replaced by the normative reference GB/T 15754 to adapt to my country's technical conditions and increase operability (see Section 3 and Chapter 4).

The following editorial changes were made to this document.

---Change the initial value 7:24 in Table 2 from 16.59429008° to 16.59428994°, and 16°35'39.4443" to 16°35' 39.4438", this is a calculation error in the original text;

---Change the initial value 1:9 in Table 2 from 6°41'34.7769" to 6°21'34.7769", which is a calculation error in the original text;

--- Deleted Note 1 in Table 2 to align with the description in Chapter 4.

1 Scope

This document provides the following information for engineering technology.

The taper and cone angle series of general purpose cones and their calculated values.

This document is applicable to smooth cones, not to pyramids, tapered threads, bevel gears, etc.

2 Normative references

The contents of the following documents constitute 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 to this document.

GB/T 15754 Product Geometry Technical Specification (GPS) Dimensions and Tolerances Cones (GB/T 15754-2025, ISO 3040:2016, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 15754 apply to this document.

4 Series Values

Table 1 gives the initial values of the taper and cone angle series of general-purpose cones. When selecting, it is advisable to give priority to series 1 to reduce the number of taper zeros.

The range of tools, gauges and measuring instruments required for the production of parts.

Table 2 should be used only in the specific circumstances indicated in the last column of the table.

To facilitate the design, production and control of conical parts, the estimated values of cone angle or taper are given in Table 1, and the number of significant digits can be determined as needed.

The dimensions and tolerances of cones shall comply with the requirements of GB/T 15754.

Table 1 Taper and cone angle series of general purpose cones

Nominal value

Initial value estimation Series 1 Series 2 Cone Angle (alpha) Degrees, minutes, seconds
 (°)(')(") (°) radian rad Taper (C) 120° - - 2.09439510 1:0.2886751 90° - - 1.57079633
 1:0.5000000 75° - - 1.30899694 1:0.6516127