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

GB/T 16770.1-2025

Replacing GB/T 16770.1-2008

**Solid hardmetal end mills with parallel shank - Part 1: Type and
dimensions**

整体硬质合金直柄立铣刀 第1部分：型式与尺寸

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 16770 "Solid Carbide Straight Shank End Mills". GB/T 16770 has been published as follows.

part.

---Part 1: Types and Dimensions;

---Part 2: Technical Requirements this document supersedes GB/T 16770.1-2008 "Solid Carbide Straight Shank End Mills - Part 1: Types and Dimensions", and is consistent with...

Compared with GB/T 16770.1-2008, apart from structural adjustments and editorial changes, the main technical changes are as follows.

a) The dimensions of solid carbide straight shank end mills have been changed (see Table 1, 2008 edition);

b) The tagging has been changed (see Chapter 5, 3.2 of the 2008 edition).

This document is modified to adopt ISO 10911:2017 "Dimensions of solid carbide cylindrical shank end mills".

This document has undergone the following structural adjustments compared to ISO 10911:2017.

---Chapter 4 corresponds to Chapters 4 and 5 of ISO 10911:2017.

The technical differences between this document and ISO 10911:2017, and the reasons therefor, are as follows.

---The scope has been revised to include an expanded range of applicable diameters (see Chapter 1) to accommodate domestic production needs;

---ISO 3338-1 (see Chapter 4) has been replaced with the normatively referenced GB/T 6131.1 to accommodate domestic production needs;

---ISO 3338-2 has been replaced with the normatively referenced GB/T 6131.2 (see Table 1) to accommodate domestic production needs;

---Added markers (see Chapter 5) to meet domestic needs.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Solid Carbide Straight Shank End Mills Part 1: Types and Dimensions";

---Adjust the footnote tolerances in Table 1 to the table header.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Cutting Tools (SAC/TC91).

Introduction

In the field of modern machining, solid carbide straight shank end mills are widely used due to their excellent cutting performance, high hardness, and wear resistance.

Used in industries such as aerospace, automotive manufacturing, and mold processing, it has become one of the key cutting tools driving the development of the manufacturing industry. GB/T 16770 "Integral..." the book "Carbide Straight Shank End Mills" is divided into two parts.

---Part 1: Types and Dimensions. This section focuses on the specifications and dimensions of cutting tools, clarifying these types and dimensions.

The inch provides a unified standard for the design and production of cutting tools.

---Part 2: Technical Requirements. This section focuses on the intrinsic quality and performance requirements of the cutting tool, ensuring the quality of solid carbide straight shank end mills.

Quality is ensured to guarantee that the cutting tools can meet various performance requirements in actual machining.

The two parts complement each other, comprehensively ensuring the standardization and reliability of solid carbide straight shank end mills during production, distribution, and use.

Reliability.

Solid carbide straight shank end mill Part 1: Types and Dimensions

1 Scope

This document specifies the types, dimensions, and markings of solid carbide straight shank end mills.

This document applies to solid carbide straight shank end mills with diameters ranging from 1mm to 20mm.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 6131.1 End Mill Straight Shanks - Part 1: Types and Dimensions of General Straight Shanks (GB/T 6131.1-2006, ISO 3338-1) 1996, IDT) GB/T 6131.2 End Mill Shanks - Part 2: Types and dimensions of flattened straight shanks (GB/T 6131.2-2006, ISO 3338-2) 2000MOD)

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Types and Sizes

The solid carbide straight shank end mill is as shown in Figure 1, and its dimensions are as specified in Table 1. The remaining dimensions and tolerances of the shank are as follows.

The provisions of GB/T 6131.1.

The relationship between this document and the symbols of ISO 13399 (all parts) is given in Appendix A.

Figure 1. Solid carbide straight shank end mill type