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

**GB/T 9167-2025**

Replacing GB/T 9167-2003

**Spline hobbing machines - Testing of the accuracy**

花键轴铣床 精度检验

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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 supersedes GB/T 9167-2003 "Accuracy Inspection of Spline Shaft Milling Machines" and GB/T 25657.1-2010 "CNC Spline Shaft Milling Machines". "Beds - Part

1.Precision Inspection". This document is based on GB/T 9167-2003 and integrates some content from GB/T 25657.1-2010. Compared with GB/T 9167-2003, the main technical changes are as follows, apart from structural adjustments and editorial modifications.

---The "Range" has been changed, from "Maximum Milling Diameter.200mm" to "Maximum Milling Diameter 400mm", and the "Maximum Workpiece Length" has also been changed. "3500mm" has been changed to "maximum workpiece length 4000mm" (see Chapter 1, Chapter 1 of the.2003 edition);

---A new chapter on "Terms and Definitions" has been added (see Chapter 3);

---A new chapter on "Naming of Main Structures and Motion Axes of Machine Tools" has been added (see Chapter 4);

---The chapter on "General Inspection Rules" has been updated to state that "all linear dimensions not specified in this document and their corresponding tolerances shall be expressed in millimeters (mm)." (See 5.1);

---The tolerance requirements for some items in the chapter on "Geometric Accuracy Inspection" have been increased (G12). Some geometric accuracy inspection items were

originally... The inspection range ">2000mm~3500mm" is changed to ">2000mm~4000mm" (G1, G2, G3). (G4.2, G11) Some geometric accuracy inspection items have added inspection for the range of >200mm~400mm (G5, G6, G7) (G12, G13) (see Chapter 6, Chapter 4 of the.2003 edition);

---A new chapter on "Positioning Accuracy and Repeatability Inspection of CNC Axes" has been added (see Chapter 7);

---The chapter on "Transmission Accuracy Inspection" has been expanded to include inspection of the range >200mm~400mm (see Chapter 8);

---The chapter on "Working Accuracy Inspection" has been expanded to include the inspection of "precision milling of involute splines" (see Chapter 9). 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 Metal Cutting Machine Tools (SAC/TC22). This document was drafted by: Baoji Yishengqing No.2 Machine Tool Manufacturing Co., Ltd., Chongqing Machine Tool (Group) Co., Ltd., and General Technology. Group Machine Tool Engineering Research Institute Co., Ltd., Tianjin No.1 Machine Tool Co., Ltd. of China General Technology Group, and Qinchuan Machine Tool Group Co., Ltd. The main drafters of this document are. Gao Jun, Yang Xiaofeng, Tong Jianning, Yu Kebin, Xue Ruijuan, Li Yi, Chai Baolian, Fan Lijun, and Wen Xiaoni. The release history of this document and the document it replaces is as follows:

---First published in 1988 as GB/T 9167-1988, and revised for the first time in.2003; This is the second revision, incorporating GB/T 25657.1-2010 "CNC Spline Shaft Milling Machines - Part

1.Precision Inspection" Content (first published in.2010 as GB/T 25657.1-2010). Spline shaft milling machine precision inspection

## 1 Scope

GB/T 9167-2025 is the Chinese national standard covering checking a spline hobber - the geometric accuracy of the slides, the spindle and the work axis, the kinematic accuracy of the generating train, and the workpiece test that decides whether the machine can hold the spline tolerance in practice. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 9167-2003.

This document specifies the geometric accuracy, CNC axis positioning accuracy and repeatability, transmission accuracy, and working accuracy of splined shaft milling machines. The requirements describe the corresponding testing methods and specify the testing items. This document applies to the accuracy inspection of splined shaft milling machines with a maximum milling diameter of 400mm and a maximum workpiece length of

4000mm. Activity.

## 2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document, wherein dated citations... 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 3478.1-2008 Cylindrical straight-tooth involute splines (metric module tooth flank fit) Part

## 3 Terms and Definitions

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

4.Naming of the main structure and motion axes of the machine tool This document specifies the main structure and names of the main components of a splined shaft milling machine (hereinafter referred to as "machine tool"), and conforms to GB/T 19660-The.2005 regulations named the axis of motion (see Figure 1).

## 5 Inspection

GB/T 10095.1-2022 Cylindrical gears - ISO tooth surface tolerance classification system - Part