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

GB/T 4680-2023

Replacing GB/T 4680-1997

**Horizontal internal type broaching machines - Testing of
accuracy**

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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 replaces GB/T 4680-1997 "Accuracy Inspection of Horizontal Internal Broaching Machines". Compared with GB/T 4680-1997, except for structural adjustments

In addition to editorial changes, the main technical changes are as follows.

- a) The applicable limit of rated tensile force is deleted from the range (see Chapter 1, Chapter 1 of the 1997 edition);
- b) Added a "Terms and Definitions" chapter (see Chapter 3);
- c) Added coordinate axes and changed the typical example diagram of horizontal internal broaching machine (see Chapter 4, Chapter 4 of the 1977 edition);
- d) Change "Brief Description" to "General Requirements", change the description of relevant content, and add requirements for inspection tools and uninspected shafts.

Seek (see Chapter 5, Chapter 3 of the.1997 edition);

e) The simplified diagrams, inspection tools and inspection methods in the geometric accuracy inspection items have been changed (see Chapter 6, 5.2 of the.1997 edition);

f) Deleted the level inspection G01 (see 5.1 of the.1997 edition);

g) The tolerance of inspection item G1 has been changed (see Chapter 6 G1, Chapter 5 G1 of the.1997 edition);

h) Change "coincidence" in inspection items G5 and G6 to "coaxiality" (see G5 and G6 in Chapter 6, G5 and G6 in 5.2 of the.1997 edition)

G6);

i) Added "Working Accuracy Inspection" (see Chapter 7).

This document is equivalent to ISO 6480.2019 "Accuracy Inspection of Inspection Conditions for Horizontal Internal Broaching Machines".

This document has made the following minimal editorial changes.

---In order to coordinate with the existing standards, the standard name is changed to "Horizontal Internal Broaching Machine Accuracy Inspection";

---Deleted Appendix A of ISO 6480.2019.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the geometric accuracy inspection and working accuracy of horizontal internal broaching machines with a horizontal Z-axis providing the main cutting movement.

test.

This document specifies the tolerances applicable to ordinary precision horizontal internal broaching machines corresponding to the above inspections.

This document explains the concept, configuration and characteristics of horizontal internal broaching machines and provides relevant terminology and axis names.

This document is only applicable to the accuracy inspection of horizontal internal broaching machines, and is not applicable to the operation inspection of horizontal internal broaching machines (such as vibration, abnormal noise, operation

(such as crawling inspection of moving parts) and parameter inspection (such as speed, feed rate, etc. inspection). These inspections are usually performed before the accuracy

inspection of the horizontal inner broaching machine.

conduct.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

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

this document.

ISO 230-1:2012 General principles for inspection of machine tools Part 1: Geometric accuracy of machine tools under no-load or quasi-static conditions (Testcode conditions)

Note. GB/T 17421.1-2023 General principles for inspection of machine tools Part 1: Geometric accuracy of machine tools under no-load or quasi-static conditions (ISO 230-1:2012, IDT)

3 Terms and definitions

The terms and definitions defined in ISO 230-1 and the following apply to this document.

3.1

broach

A cutting tool with multiple transverse cutting edges, each cutting edge having an increasing cutting size.

3.2

broaching machine

Machine tools for broaching.

3.3

A machining process in which a broach is pushed or pulled through a through hole to remove material in a linear cut.

3.4

A horizontal broaching machine that pushes or pulls a broach through a through hole inside a workpiece to remove material.

Note. Horizontal broaching machine refers to a broaching machine whose main cutting axis (Z-axis) moves in the horizontal direction.

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