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

GB/T 4022-1983

**Surface grinding machines with horizontal grinding wheel
spindle and reciprocating table - Testing of the accuracy - Part
1: Machines with table surface length of up to 1 600 mm
(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 of Standardization Documents" Drafting.

This document is the first part of GB/T 4022 "Accuracy Inspection of Horizontal Axis Rectangular Table Surface Grinder".

GB/T 4022 "Accuracy Inspection of Horizontal Axis Rectangular Table Surface Grinder" has released the following parts.

---Part 1: Machine tools with worktable length up to 1600mm.

This document replaces GB/T 4022.1-2007 "Accuracy Inspection of Horizontal Axle Rectangular Table Surface Grinder Part 1: Working Table Length to 1600mm machine tool, compared with GB/T 4022.1-2007, in addition to editorial changes, the main technical changes are as follows.

- Regarding normative references, the international standard ISO 230-1:2012 is used instead of GB/T 17421.1-1998 (see Chapter 2, Chapter 4, Chapter 5, and Chapter 6);
- Modified the tolerances of G1, G3 and G4 in Chapter 5 (see Chapter 5, Chapter 5 of the 2007 edition);
- Modified the schematic diagram of Chapter 5 G5 (see Chapter 5, Chapter 5 of the 2007 edition);
- The remarks of Chapter 5 G4, G5, G6 and Chapter 6 M1 and M2 have been revised and referenced (see Chapter 5 and Chapter 6, Chapter 6 of the 2007 edition).

Chapter 5 and Chapter 6).

This document uses the redrafting method to amend and adopt ISO 1986-1:2014 "Accuracy Inspection No. 1 of Inspection Conditions for Horizontal Axle Rectangular Surface Grinder Part. Machine tools with a machine table length up to 1600mm." Compared with ISO 1986-1:2014, this document has technical differences, and the clauses related to these differences have been passed on the outer margins.

The vertical single line (I) of the position is marked, and Appendix A gives a list of the corresponding technical differences and their reasons.

Compared with ISO 1986-1:2014, this document has editorial changes as follows.

- Change the standard name to "Accuracy Inspection of Horizontal Axis Rectangular Table Surface Grinding Machine Part 1: Machines with a working table length up to 1600mm bed";
- Deleted the informative appendix A "corresponding terms in other languages" of ISO 1986-1:2014;
- Deleted the "reference" of ISO 1986-1:2014.

Introduction

The purpose of this document is to standardize the accuracy inspection methods of general-purpose general-precision horizontal axis and rectangular table surface grinders. The main the function is to grind the plane of the workpiece. This document verifies the geometric accuracy and working accuracy of the machine tool for the purpose of realizing the main functions of the machine tool.

It is clearly stipulated.

GB/T 4022 "Accuracy Inspection of Horizontal Axis Rectangular Table Surface Grinder" is planned to consist of 2 parts.

---Part 1: Machine tools with worktable length up to 1600mm;

---Part 2: Machine tools with worktable length greater than 1600mm.

The revision of ISO 1986 is as follows. ISO 1986:1974 was the first formulation, ISO 1986-1:2001 released in 2001 is correct the first revision of ISO 1986. Since this version, the standard has been divided into two parts. Part 1 is ISO 1986-1:2001 work surface length Machine tools up to 1600mm; Part 2 is machine tools with table lengths greater than 1600mm; ISO 1986-1 issued in 2014.

2014 is the second revision of ISO 1986, which completely replaced ISO 1986-1:2001 and made technical revisions.

In order to make the domestic horizontal axis and rectangular table surface grinder have a domestic standard corresponding to the international standard, it was first formulated and released with reference to ISO 1986:1974 GB 4022-1983, with the update of the ISO 1986 version, in order to adapt to the development of international technology, GB 4022-1983 was revised for the first time in 2007.

The timing amendment adopts ISO 1986-1:2001, which corresponds to the international standard. This version is also divided into 2 parts. The first part is GB/T 4022.1-

2007 Machine tools with a working table length up to 1600mm, the second part is machine tools with a working table length greater than 1600mm; this revision uses the redrafting method is revised to adopt ISO 1986-1:2014, and Part 2 is reserved for machine tools with a working table length greater than 1600mm.

Accuracy inspection of horizontal axis and rectangular table surface grinder Part 1: Machine tools with table length up to 1600mm

1 Scope

This document (refer to ISO 230-1:2012) specifies the working table length for general purpose and general accuracy up to 1600mm horizontal axis rectangular table Geometric accuracy inspection and work accuracy inspection of surface grinders. This document specifies corresponding tolerances for these inspections.

This document does not apply to surface grinders with fixed or round tables, nor does it apply to surface grinders with longitudinally moving grinding heads.

This document is only applicable to the accuracy inspection of the machine tool, not to the operation inspection of the machine tool (such as vibration, abnormal noise, climbing of moving parts).

It is also not applicable to the parameter inspection of the machine tool (such as speed, feed, etc.). These inspections should usually be carried out before the accuracy inspection.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 19660-2005 Industrial automation system and integrated machine tool numerical control coordinate system and motion naming (ISO 841.

2001, IDT)

ISO 230-1:2012 General Rules for Inspection of Machine Tools Part 1: Geometric Accuracy of Machine Tools under No Load or Quasi-static Conditions (Testcode formachinetools-Part 1: Geometricaccuracyofmachinesoperatingunderno-loadorquasi-staticcon-ditions)

3 Nomenclature of terms and axis

This document gives the terminology of the main parts of the machine tool, and names the coordinates and movement of the machine tool in accordance with the provisions of GB/T 19660-2005.

To (see Figure 1 and Table 1).

Note: See Table 1 for notes 1~9 in the figure.