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

GB/T 21949.1-2008

**CNC universal tool milling machines - Part 1: Testing of the
accuracy**

数控万能工具铣床 第1部分：精度检验

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Table of Contents

1 Scope	1
2 Normative references	1
3 General requirements	1
3.1 Units of measurement	1
3.2 Installation Level	1
3.3 Test sequence	1
3.4 Test Item	1
3.5 inspection tool	1
3.6 Working accuracy test	1
3.7 minimum tolerance	2
3.8 Inspection direction	2
3.9 Test plane	2
3.10 universal machine host with the work desktop test	2
4 Part 2 and motion axis name Geometric tests 3 5	25
7 Working accuracy test	27

Foreword

GB/T 21949 "CNC universal milling machine tools" is divided into two parts.

--- Part 1. Testing of the accuracy;

--- Part 2. Technical requirements. This is Part 1 GB/T 21949 of. This part is proposed by China Machinery Industry Federation. This part of the National Metal Cutting Machine Standardization Technical Committee (SAC/TC22) centralized. This section is drafted. Kunming milling plant. The main drafters of this section. LORRAINE steady, Tanzhao Kang. CNC universal milling machine tools - Part 1. Testing of the accuracy

1 Scope

GB/T 21949.1-2008 is the Chinese national standard on cnc universal tool milling machines - part 1: testing of the accuracy, in the field of manufacturing engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 3 June 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic

of China; Standardization Administration of China, and has been in force since 1 January 2009. Classification: ICS 25.080.20, CCS J54. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This section GB/T 21949 specifies the CNC universal milling machine tool geometric precision, positioning accuracy and precision requirements and testing method. This section applies to the horizontal (Magnum, NC rotary) working table width 200mm ~ 630mm general purpose general level and Precision Precision CNC universal milling machine tools.

2 Normative references

The following documents contain provisions which, through reference

GB/T 21949 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 17421.1-1998 Test code for machine tools - Part 1. under no-load or finishing conditions Geometric accuracy of machines (eqv ISO 230-1.1996)

GB/T 17421.2-2000 Test code for machine tools - Part 2. CNC axis positioning accuracy and repeatability of determination (Eqv ISO 230-2.1997)

GB/T 19660-2005 Industrial automation systems and integration - Numerical control of machines and motion coordinate system named (ISO 841. 2001, IDT)

3 General requirements

3.1 Units of measurement This section all linear dimensions are in millimeters (mm) represents; major angular deviation as a ratio. In some cases For clarity, Also used microradians (μrad) or arcsec (") indicates its conversion relation formula below.
 $0.010/1000 = 10\mu\text{rad} \sim 2 "$

3.2 Installation level According to GB/T 17421.1-1998 adjust the machine to install the

3.1 level. The table in the middle position of travel. Workbench Place the central level meter. Levels in both vertical and horizontal readings are not more than 0.04/1000.

3.3 Test order Inspection order under this Part may not represent the actual test sequence. In order to make an inspection tool assembly and disassembly and inspection of

convenience, can be arbitrary Order of inspection.

3.4 Test Project When the test machine, according to the structural characteristics must not test all of the items in this section. When testing requirements for acceptance purposes, can Select the manufacturer to obtain the consent of interested test items by the user, but these test items must be clearly stated at the time of ordering the machine. Test case associated with the horizontal bench test items using only the first level table I install base installation.

3.5 inspection tool Test tools provided in this section is only an example, you can use the same amount of instructions or have other tools to test at least the same accuracy. Indicators should have a 0.001mm or higher resolution.

3.6 Working accuracy test Working accuracy test shall be carried out after finishing.