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

GB/T 17421.5-2015

**Test code for machine tools -- Part 5: Determination of the noise
emission**

机床检验通则 第5部分：噪声发射的确定

(English Translation)

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Foreword

GB/T 17421 "General machine test" is divided into 11 sections.

- Part 1. under no-load or finishing conditions Geometric accuracy of machines;
- Part 2. CNC axis positioning accuracy and repeatability of the determination;
- Part 3. determination of thermal effects;
- Part 4. Circular tests CNC machine tools;
- Part 5. determination of noise emission;
- Part 6. Determination of body and face diagonal positioning accuracy (diagonal displacement test);

--- Part 7. Geometric accuracy of the axis of rotation;

--- Part 8. Vibration (Technical Report);

Part --- Article 9. ISO 230 series basic equations machine test standard uncertainty of estimates (Technical Report);

--- Part 10. determination of CNC machine tools to measure performance;

--- Part 11. Geometric tests for machines with a measuring instrument (preparation stage) (Technical Report).

This section GB/T 17421 Part 5.

This section Press GB/T 1.1-2009 given rule drafting.

This section uses the translation method identical with ISO 230-5:2000 "General machine testing - Part 5. determination of noise emission" (English Version).

Consistency correspondence between the international normative documents in this section of our references with the following documents.

--- Determination of sound power levels of noise sources reflecting plane free field engineering method GB/T 3767-1996 Acoustics sound pressure (EqvISO 3744.1994)

--- GB/T 3768-1996 Determination of sound pressure of sound power levels of noise sources using simple reflecting plane enveloping measurement surface Trade Law (eqvISO 3746.1995)

--- GB/T 4129-2003 Acoustics sound power levels of noise sources - Determination of the sound source calibration and performance requirements (ISO 6926.

2000, IDT)

--- Indication and verification GB/T 14574-2000 Acoustics machinery and equipment noise emission values (eqvISO 4871.1996)

--- GB/T 17248.1-2000 Acoustics machinery and equipment noise emission measurement operating position and at other specified positions launch SPL basic standards Guide for the use (eqvISO 11200.1995)

--- GB/T 17248.3-1999 Acoustics machinery and equipment noise emission working position (eqvISO 11202.1995)

--- GB/T 17248.5-1999 Acoustics - Noise emitted by machinery and equipment and other operating positions specified position emission sound pressure Level measurement environment Amendment Act (eqvISO 11204.1995) for ease of use, this section the following editorial changes were made such as.

--- An increase of Chapter 6 article number (ie 6.1 to 6.4);

--- Increased Chapter 7 Article number (ie 7.1 to 7.2);

--- Increased Chapter 9 article number (ie 9.1 to 9.6).

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. Shenyang Machine Group Kunming Machine Tool Co., Ltd., Beijing Machine Tool Research Institute.

1.1 Overview

This section GB/T 17421 specifies the fixed workplace noise test method and its associated tools assist device on the ground. Measurement the purpose is to test the measured noise emission data of the machine.

The measured data can be used to declare and verify the machine's noise emission ISO 4871 requirements. In accordance with the provisions of the environmental conditions, installation and Working conditions, it can also be used to compare the performance of different units of the same type of machine or device.

Connection with a number of machine tools, and focus auxiliary devices operating together emitted noise should be considered as background noise. This section of "auxiliary device Set "refers to a hydraulic power boxes, chip conveyor, coolant oil mist separation means, heat exchange means, cooling means and so on.

This section gives a test machine installation, general instructions to run, work location and other designated location measurement microphone position. Equipment Noise test body may be specified in the relevant test various types of machine tools.

This section in Chapter 11 provides the noise level is measured in the vicinity of the position of methodological work tools and other designated location, the method adopted the ISO 11202 and ISO 11204 method specified.

Chapter 12 This section sets out on an imaginary envelope surface measuring machines measure the SPL, and calculates that the machine sound power level party , The method using the method ISO 3744 and ISO 3746 requirements.

This section does not involve the use of sound intensity method (see GB/T 16404 and GB/T 16404.2) measured sound power level.

1.2 Types of noise and noise sources

The method specified in this part for measuring a variety of machine noise emission.

This section applies to a variety of types and specifications of the machine, including

equipment, parts and components.

Note: in this section may not be measured or ultra-long machine, such as automatic line.

1.3 Test Environment

This part of the test environment is generally. a plurality of indoor or reflective surfaces, and to meet this part of the provisions of 11.4.2 and 12.3.2 Requirements.

1.4 Accuracy class

Test a specified location in accordance with the provisions of this part of the method of sound power level and sound pressure level value of a machine is likely not the true value Same, the difference should be within the range specified measurement uncertainty. Noise level measuring sound power level measurement uncertainty is due to several Factors affecting the test results caused by environmental conditions, some of which is related to the test sites, and other measurement technologies.

The method of testing according to the noise level and sound power level specified in this part, the results should meet the Class 2 accuracy (engineering method) and 3 fine Degree (simple method). Because of the higher Class 2 accuracy, it should be possible to reach level 2. Chapter 7 gives special information measurement uncertainty.

Although Class 2 accuracy (engineering method) higher, but grade 3 accuracy (simple method) can meet the requirements of noise declaration and other purposes. This section only A complete description of the measurement accuracy of three. For precision measurement level 2, but also the use of ISO 3744 and ISO 11204 regulations.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein