

ICS 25.040.20

CCS J 53



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

GB/T 16462.8-2009

**Test conditions for numerically controlled turning machines
and turning centre -- Part 8: Evaluation of thermal distortions**

数控车床和车削中心检验条件 第8部分：热变形的评定

(English Translation)

Issued on: April 13, 2009

Implemented on: January 1, 2010

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Short Description
 - 4.1 Referring to GB/T 17421.3-2009
 - 4.2 Test order
 - 4.3 Test Project

Foreword

GB/T 16462 "CNC lathes and turning centers Test conditions" is divided into eight sections.

- Part 1. Horizontal Geometric tests for machines;
- Part 2. Vertical Geometric tests for machines;
- Part 3. Geometric tests inverted vertical machine;
- Part 4. linear and rotary axes positioning accuracy and repeatability of the test;
- Part 5. feed, speed, and interpolation accuracy test;
- Part 6. finishing accuracy test specimen;
- Part 7. Evaluation of contouring performance in the coordinate plane;
- Part 8. Evaluation of thermal deformation.

This section GB/T Part of 816,462.

The partial modification using ISO 13041-8:2004 "Part 8 CNC lathes and turning centers Test conditions. Evaluation of thermal deformation" (English Chinese Version). About the technical differences have been incorporated into the body and they are involved in terms of the margin of a single vertical line identification.

This portion of the ISO 13041-8. compared to 2004, the main differences are.

- Some statements to applicable international standards applicable to our standard formulation;
- Chapter 1 Scope to add a "linear axis travel greater than 2000mm CNC lathes and turning centers can also refer to the use of" Terms;

--- Note in the 6.2 "for example, at 70% of maximum spindle rpm 3min, then the spindle stop 1min" to "recommendations by the spindle Times to form 30% of max running 3min, 50% like max running 4min, 70% like max running 3min, 100% like max running 1min, the master Axis stop 1min";

--- Table 1, Table 2 "arc seconds, mm/mm" unity to "". " 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 Tool (Group) Co., Ltd.

1 Scope

This section GB/T 16462 specifies the evaluation of thermal deformation of CNC lathes and turning centers of the machine structure and positioning systems.

This section applies to linear axis travel 2000mm CNC lathes and turning centers. The number of linear axis travel greater than 2000mm Control lathes and turning centers also refer to use.

This section specifies three test methods, namely.

- Changes in ambient temperature error checking;
- Examination by the thermal deformation caused by the rotation of the spindle;
- Examination by a linear axis thermal distortion caused by the movement.

It should be noted that the test described in this section does not give a specific tolerance value.

2 Normative references

The following documents contain provisions which, through reference GB/T 16462 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 16462.1 CNC lathes and turning centers test conditions - Part 1. Geometric tests for machines Horizontal (GB/T 16462.1-2007, ISO 13041-1:2004, MOD) Part of GB/T 17421.1-1998 Test code for machine 1. under no-load or finishing conditions Geometric accuracy of machines (EqvISO 230-1.1996) GB/T 17421.3-2009 Test code for machine tools - Part 3. determination of thermal effects (ISO 230-3:2001, IDT)

3 Terms and Definitions

GB/T 16462.1 of the terms and definitions apply to this part of the GB/T 16462 of.

4.1 Referring to GB/T 17421.3-2009

Use GB/T 16462 in this section should reference GB/T 17421.3, especially describes the installation, measuring machine test method before and test results indicate.

4.2 Test order

This section tests can be carried out separately, it can also be carried out in any combination.

4.3 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, by Supplier (or manufacturer) agreement, the user can select a number of items of interest for inspection. However, these items must be ordered in the test machine when clearly. If no test items and related costs of the agreement, only with reference to this part of the acceptance of the contracting parties are not Binding.