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

GB/T 16462.7-2009

**CNC lathes and turning centers test conditions -- Part 7:
Evaluation of contouring performance in the coordinate plane
(English Translation)**

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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 16462 Part 7.

This section identical with ISO 13041-7:2004 "CNC lathes and turning centers test conditions - Part 7. contour in the coordinate plane Evaluation of Characteristics "(in English).

This portion of the ISO 13041-7. compared to 2004, the main differences are.

- Some statements to applicable international standards applicable to our standard formulation;
- In addition to this part of the international standard errors were corrected, the provisions of Chapter 1, note the "generally refers to the X-axis and Y-axis" with "Generally refers to the X and Z axes." 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 deviation assessment method F and G to the circle bias according to GB/T 17421.4 circle radius and contour inspection the contours characteristic inspection method turning centers and CNC lathes.

Note: Measuring a circular motion can be different methods in 6.6 T 17421.1-1998 performed as described by GB/T these include. the use of a one-dimensional measurement Head and a test measuring stick, a reference disc and a two-dimensional measurement probe or a ballbar measurement. If you use other methods of measurement, which make Test tools test tools is at least the same method described above or higher accuracy. Effect of typical machine deviations on circular tracks, see GB/T 17421.4-2003 in Appendix B.

Round test concepts described in this section is a circular movement check.

- Test each machine in a position only on the coordinate plane;
- In only one feed rate; and
- Contour in the opposite direction to repeat test once.

This section is not intended to analyze the reasons for the deviation of the measured circle generated, but to provide users a way to periodically check the machine method. In the machine tool it is recommended in this section of the test, and use these test results as a comparison during a periodic inspection after acceptance by the According to, so the initial test results acceptable deviation must be determined by the user.

If the test is used as the machine acceptance, the supplier/manufacturer and the user must be on specific locus diameter, feed rate and tolerance of an agreement.

Note: ISO 13041-5 feeds, speeds and interpolations accuracy test standard, K4 test also includes round test, its purpose is to check on the same given diameter, two A given feed rate trajectories under two linear axes (usually X and Z axes) mutual movement produced similar diagnostic test for this test and circle interpolation, and this section gives information circular test machine all the contour characteristics.

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) GB/T 17421.1-1998 Test code for machine tools - Part 1. under no-load or finishing conditions Geometric accuracy of machines (EqvISO 230-1.1996) GB/T 17421.4-2003 Test code for machine tools - Part 4. CNC machine tools circular test (ISO 230-4:1996, IDT)

3 Terms and Definitions

Terms and definitions GB/T 16462.1 given apply to this part of GB/T 16462 of.

4.1 Referring to GB/T 17421.1 and GB/T 17421.4

This section uses GB/T 16462 should be a reference to GB/T 17421.1 and GB/T 17421.4, especially before the test machine safety GB/T 16462.7-2009/ISO 13041-7:2004