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

GB/T 34880.2-2025

Replacing GB/T 34880.2-2017

**Test conditions for 5-axis simultaneous machining centers -
Part 2: Testing of the accuracy for vertical machine**

五轴联动加工中心检验条件 第2部分：立式机床精度检验

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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 for standardization documents" Drafting.

This document is part 2 of GB/T 34880 "Test conditions for five-axis machining centers". GB/T 34880 has published the following part.

- Part 1: Accuracy inspection of horizontal machine tools;
- Part 2: Vertical machine tool accuracy inspection;
- Part 3: Technical conditions.

This document replaces GB/T 34880.2-2017 "Test conditions for five-axis machining centers Part 2: Precision test conditions for vertical machine tools" Compared with GB/T 34880.2-2017, in addition to structural adjustments and editorial changes, the main

technical changes are as follows.

- a) The requirements of the implementation standard have been changed (see 4.2, 4.2 of the 2017 edition);
- b) Changed the requirements for inspection tools (see 4.5, 4.5 of the 2017 edition);
- c) Added the requirements for tool center point following function (RTCP) accuracy inspection (see 4.6);
- d) The requirements for the type of test piece have been changed (see 4.7, 4.6 of the 2027 edition);
- e) Changed the requirements for software compensation (see 4.9, 4.10 of the 2017 edition);
- f) Added the position of non-test axis (see 4.10);
- g) Changed the requirements for schematic drawings (see 4.11, 4.8 of the 2017 edition);
- h) Changed the requirements for pallets (see 4.12, 4.9 of the 2017 edition);
- i) Added requirements for inspection environmental conditions (see 4.13);
- j) The minimum tolerance requirements have been changed (see 4.16, 4.13 of the 2017 edition);
- k) Changed the straightness error inspection requirements for X-axis, Y-axis and Z-axis motion (see G1 to G3 in 5.1, 2017 edition). G1~G3);
- l) Changed the angular error inspection requirements for X-axis, Y-axis and Z-axis motion (see G4~G6 in 5.2, 2017 edition). G4~G6);
- m) Changed the relationship between Z axis movement and X axis movement, Z axis movement and Y axis movement, Y axis movement and X axis movement Verticality error inspection requirements between (see G7 to G9 in 5.3, G7 to G9 in the 2017 edition);
- n) Changed the spindle's axial error motion, the spindle taper's radial error motion, and the parallelism between the spindle axis and the Z axis motion Error, perpendicularity error between spindle axis and X axis movement, perpendicularity error between spindle axis and Y axis movement Requirements (see G10~G14 in 5.4, G10~G14 in the 2017 edition);
- o) Changed the flatness error inspection requirements for the worktable (see G15 in 5.5, G15 in the 2017 edition);
- p) Deleted the parallelism between the worktable and the X-axis and Y-axis motion, the runout between the worktable center hole and the worktable, and the worktable rotation. Inspection requirements for the intersection and equidistance between the axis and the positioning datum (see G16 to G20 in the 2017 edition);
- q) The requirement for perpendicularity inspection between the axis of rotation and the

linear motion has been deleted (see G21 to G23 in the 2017 edition);

r) The requirement for the perpendicularity test between the rotation axes has been deleted (see G24 of the 2017 edition);

s) The intersection inspection requirement between rotation axes has been deleted (see G25 of the 2017 edition);

t) Deleted the parallelism test requirement between the rotation axis and the linear motion (see G26 in the 2017 edition);

u) Changed the positioning accuracy and repeatability test requirements for linear and rotary axes (see P1 and P2 in Chapter 6, 2017). Versions 6.1 and 6.2);

v) Changed the working accuracy inspection requirements (see Chapter 7, Chapter 7 of the 2017 edition);

w) Added additional geometric accuracy inspection requirements for AC swing rotary table machine tools (see Appendix A);

x) Added additional geometric accuracy inspection requirements for BC swing rotary table machine tools (see Appendix B);

y) The additional geometric accuracy inspection requirements for oscillating spindle head machine tools have been changed (see Appendix C, Appendix A of the 2017 edition);

z) The additional geometric accuracy inspection requirements for rotary and swinging spindle head machine tools have been changed (see Appendix D, Appendix B of the 2017 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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