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Test code for machine tools —

Part 7:
Geometric accuracy of axes of rotation

Code d'essai des machines-outils —

Partie 7: Exactitude géométrique des axes de rotation

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Foreword

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The committee responsible for this document is ISO/TC 39, *Machine tools*, Subcommittee SC 2, *Test conditions for metal cutting machine tools.*

This second edition cancels and replaces the first edition (ISO 230–7:2006), which has been technically revised.

ISO 230 consists of the following parts, under the general title *Test code for machine tools*:

— *Part 1: Geometric accuracy of machines operating under no-load or quasi-static conditions*

— *Part 2: Determination of accuracy and repeatability of positioning of numerically controlled axes*

— *Part 3: Determination of thermal effects*

— *Part 4: Circular tests for numerically controlled machine tools*

— *Part 5: Determination of the noise emission*

— *Part 6: Determination of positioning accuracy on body and face diagonals (Diagonal displacement tests)*

— *Part 7: Geometric accuracy of axes of rotation*

— *Part 8: Vibrations* [Technical Report]

— *Part 9: Estimation of measurement uncertainty for machine tool tests according to series ISO 230, basic equations* [Technical Report]

— *Part 10: Determination of the measuring performance of probing systems of numerically controlled machine tools*

— *Part 11: Measuring instruments suitable for machine tool geometry tests* [Technical Report]

Introduction

This International Standard has been revised based on the comments received from industry and academia related to the applications of axis of rotation error motions to rotary tables, and other milling and drilling operations where more than one sensitive direction can be of critical importance. In this revision, the terms and definitions were updated and the special cases, where 1st order harmonic of radial error motion differs in different directions, were addressed. They are also reordered based on a modified structure for better clarifying the general concepts and their applications. The cases where there are multiple sensitive directions as well as the consequence of axis of rotation error motion in radial location of parts (2D sensitive direction) are described.