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Geometrical product specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM) —

Part 2: CMMs used for measuring linear dimensions

Spécification géométrique des produits (GPS) — Essais de réception et de vérification périodique des machines à mesurer tridimensionnelles (MMT) —

Partie 2: MMT utilisées pour les mesures de dimensions linéaires



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Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols.....	4
5 Environmental and metrological requirements.....	4
5.1 Environmental conditions	4
5.2 Operating conditions	5
5.3 Length measurement error, E_L	5
5.4 Repeatability range of the length measurement error, R_0	5
5.5 Workpiece loading effects	5
6 Acceptance tests and reverification tests	6
6.1 General	6
6.2 Principle.....	6
6.3 Length measurement error with zero ram axis stylus tip offset, E_0	7
6.3.1 General	7
6.3.2 Measuring equipment	7
6.3.3 Procedure	8
6.3.4 Derivation of test results	9
6.4 Repeatability range of the length measurement error, R_0	9
6.5 Length measurement error with ram axis stylus tip offset of 150 mm, E_{150}	10
6.5.1 Measuring equipment	10
6.5.2 Procedure	10
6.5.3 Derivation of test results	12
6.6 Dual ram CMMs.....	12
6.6.1 Simplex operating mode.....	12
6.6.2 Duplex operating mode.....	12
7 Compliance with specifications	13
7.1 Acceptance test.....	13
7.1.1 Acceptance criteria	13
7.1.2 Data rejection and repeated measurements.....	14
7.2 Reverification test	14
8 Applications	14
8.1 Acceptance test.....	14
8.2 Reverification test	15
8.3 Interim check	15
9 Indication in product documentation and data sheets.....	15
Annex A (informative) Interim check.....	16
Annex B (normative) Artefacts that represent a calibrated test length.....	18
Annex C (informative) Alignment of gauges	23
Annex D (normative) Mathematical adjustments to low CTE artefacts.....	25
Annex E (informative) Location of the single stylus probing test	27

This is a preview of "ISO 10360-2:2009". [Click here to purchase the full version from the ANSI store.](#)

Annex F (informative) Relation to the GPS matrix model	28
Bibliography	29

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10360-2 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This third edition cancels and replaces the second edition (ISO 10360-2:2001), which has been technically revised.

ISO 10360 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM)*:

- *Part 1: Vocabulary*
- *Part 2: CMMs used for measuring linear dimensions*
- *Part 3: CMMs with the axis of a rotary table as the fourth axis*
- *Part 4: CMMs used in scanning measuring mode*
- *Part 5: CMMs using single and multiple stylus contacting probing systems*
- *Part 6: Estimation of errors in computing Gaussian associated features*
- *Part 7: CMMs equipped with imaging probing systems*

Introduction

This part of ISO 10360 is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO/TR 14638). It influences link 5 of the chains of standards on size, distance, radius, angle, form, orientation, location, run-out and datums. For more detailed information of the relation of this part of ISO 10360 to other standards and the GPS matrix model, see Annex F.

The tests of this part of ISO 10360 have three technical objectives:

- 1) to test the error of indication of a calibrated test length using a probing system without any ram axis stylus tip offset;
- 2) to test the error of indication of a calibrated test length using a probing system with a specified ram axis stylus tip offset; and
- 3) to test the repeatability of measuring a calibrated test length.

The benefits of these tests are that the measured result has a direct traceability to the unit length, the metre, and that it gives information on how the CMM will perform on similar length measurements.

Clause 3 of this part of ISO 10360 contains definitions that supersede similar definitions in ISO 10360-1:2000.

The revised definitions are required to avoid an ambiguity that would otherwise have been introduced with this issue of ISO 10360-2. Also, definition 3.6 supersedes effectively an identical definition in ISO 10360-1:2000 because the symbols used have been revised and expanded for clarification.