



SLOVENSKI STANDARD
SIST ISO 10360-2:2002

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Geometrical Product Specifications (GPS) -- Acceptance and reverification tests for coordinate measuring machines (CMM) -- Part 2: CMMs used for measuring size

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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 tailles

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ICS:

17.040.30 Merila Measuring instruments

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INTERNATIONAL STANDARD

**ISO
10360-2**

Second edition
2001-12-15

Geometrical Product Specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM) —

Part 2: CMMs used for measuring size

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

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Partie 2 : MMT utilisées pour les mesures de tailles



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ISO 10360-2:2001(E)

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 3.

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 part of ISO 10360 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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

This second edition cancels and replaces the first edition (ISO 10360-2:1994), which has been technically revised and whose title has changed.

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 <https://standards.iteh.ai/catalog/standards/sist/9603b8f2-3020-40ff-9b95-86c396afc74e/sist-iso-10360-2-2002>
- Part 2: CMMs used for measuring size
- 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 multiple-stylus probing systems
- Part 6: Estimation of errors in computing Gaussian associated features

Annexes A and B of this part of ISO 10360 are for information only.

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 B.

The tests of this part of ISO 10360 have two different technical objectives, which are to test

- the error of indication for size measurement, and
- the probing error,

of which the more important is the test for the error of indication for size measurement. The benefit of this test is that the measured result has a direct traceability to the unit length, the metre, and that it gives knowledge on how the CMM will perform when similar measurement relative to the unit length is performed.

The other test is intended to assess the 3D-probing error as a supplement to the test for the error of indication for size measurement, which only involves the probing system in two dimensions. Because it is not possible to completely isolate the probing errors from other sources of machine error, some measurement errors, of both static and dynamic origin, inherent in the other parts of the CMM measuring system, will affect the results of measurement in this test.

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Geometrical Product Specifications (GPS) — Acceptance and reverification tests for coordinate measuring machines (CMM) —

Part 2: CMMs used for measuring size

1 Scope

This part of ISO 10360 specifies the acceptance test for verifying that the performance of a CMM used for measuring size is as stated by the manufacturer. It also specifies the reverification test which enables the user to periodically reverify the performance of a CMM used for measuring size.

The acceptance and reverification tests of

— probing error, and

— error of indication for size measurement,

given in this part of ISO 10360, are applicable only to CMMs using contacting probing systems of any type operating in the discrete-point probing mode. [SIST ISO 10360-2:2002](https://standards.iteh.ai/catalog/standards/sist/9603b8f2-3020-40ff-9b95-86c396afc74e/sist-iso-10360-2-2002)

This International Standard specifies

— performance requirements that can be assigned by the manufacturer or the user of the CMM,

— the manner of execution of the acceptance and reverification tests to demonstrate the stated requirements,

— rules for proving conformance, and

— applications for which the acceptance and reverification tests can be used.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 10360. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 10360 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3650:1998, *Geometrical Product Specifications (GPS) — Length standards — Gauge blocks*

ISO 10360-1:2000, *Geometrical Product Specifications (GPS) — Acceptance and reverification test for coordinate measuring machines (CMM) — Part 1: Vocabulary*

ISO 14253-1:1998, *Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 1: Decision rules for proving conformance or non-conformance with specifications*