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(JSA)

**Geometrical product specifications  
(GPS)—Acceptance and  
reverification tests for coordinate  
measuring machines (CMM)—  
Part 2: CMMs used for measuring  
linear dimensions**

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## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently, **JIS B 7440-2:2003** is replaced with this Standard.

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**JIS B 7440** series consists of the following 9 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: CMM's 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 (under preparation)*

*Part 8: CMMs with optical distance sensors (under preparation)*

*Part 9: CMMs with multiple probing systems (under preparation)*

# Geometrical product specifications (GPS)— Acceptance and reverification tests for coordinate measuring machines (CMM)— Part 2: CMMs used for measuring linear dimensions

## Introduction

This Japanese Industrial Standard has been prepared based on the third edition of **ISO 10360-2** published in 2009 without any modifications of the technical contents.

The portions with continuous sidelines or dotted underlines are the matters not given in the corresponding International Standard.

This Standard 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 Standard to other standards and the GPS matrix model, see Annex E.

The tests of this Standard have three technical objectives:

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

Note <sup>1)</sup> For the measure to represent a calibrated test length, see Annex B.

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.

**JIS B 7440-5** describes checking the probing system, hence prior to beginning the testing described in this Standard, it is recommended to perform the single- or multiple-stylus probing system test, as appropriate, described in **JIS B 7440-5**, to ensure that the probing system is operating within specifications.

Clause 3 of this Standard contains definitions that supersede similar definitions in **JIS B 7440-1**.

The revised definitions are required to avoid an ambiguity that would otherwise have been introduced with this Standard. Also, definition 3.6 supersedes effectively an identical definition in **JIS B 7440-1** because the symbols used have been revised and expanded for clarification.