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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by the Japan Society of Mechanical Engineers (JSME)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Geometrical product specifications (GPS)— General concepts and requirements for GPS measuring equipment

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 14978** published in 2006, with some modifications of the technical contents such as the addition of maximum permissible errors as **JIS** original specification.

This Standard is a geometrical product specification (GPS) standard and is to be regarded as the global GPS standard. It influences chain links 5 and 6 of all chains of standards in the general GPS matrix. For more detailed information of the relation of this Standard to other standards and the GPS matrix model, see Annex C.

The portions with dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JB. Annex JA contains matters that are not included in the corresponding International Standard.

1 Scope

This Standard specifies the general requirements, terms and definitions, and design and metrological characteristics of GPS measuring equipment, e.g. micrometers, dial gauges, callipers, height gauges, gauge blocks and it forms the basis for other related standards for measuring equipment. It does not necessarily exclude more complicated equipment. It also gives guidance for the development and content of standards for GPS measuring equipment.

This Standard is intended to ease the communication between manufacturer (supplier) and user (customer) and to make the specification phase of GPS measuring equipment more accurate. This Standard is also intended as a tool to be used in companies in the process of defining and selecting relevant characteristics for measuring equipment to be used in the quality assurance of measuring processes, i.e. in calibration and in workpiece measurements.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 14978:2006 *Geometrical product specifications (GPS)—General concepts and requirements for GPS measuring equipment* (MOD)

The symbols which denote the degree of correspondence in the contents in the corresponding International Standard and **JIS** are IDT (identical), MOD (modified) and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 0021 *Geometrical product specifications (GPS)—Geometrical tolerancing—Tolerancing of form, orientation, location and run-out*

NOTE : Corresponding International Standard: ISO 1101 *Geometrical Product Specifications (GPS)—Geometrical tolerancing—Tolerances of form, orientation, location and run-out* (MOD)

JIS B 0022 *Datums and datum-systems for geometrical tolerances*

NOTE : Corresponding International Standard: ISO 5459 *Technical drawings—Geometrical tolerancing—Datums and datum-systems for geometrical tolerances* (MOD)

JIS B 0641-1 *Geometrical Product Specifications (GPS)—Inspection by measurement of workpieces and measuring equipment—Part 1: Decision rules for proving conformance or nonconformance with specifications*

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

JIS B 0680 *Geometrical Product Specifications (GPS)—Standard reference temperature for geometrical product specification and verification*

NOTE : Corresponding International Standard: ISO 1 *Geometrical Product Specifications (GPS)—Standard reference temperature for geometrical product specification and verification* (IDT)

JIS Z 8103 *Glossary of terms used in measurement*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in **JIS B 0641-1** and **JIS Z 8103**, and the following apply.

3.1 measuring equipment, ME

any instrument, reference equipment and/or auxiliary apparatus or any combination thereof necessary to implement a measurement process for carrying out a specified and defined measurement

NOTE : The concept measuring equipment includes, for example, indicating measuring instruments (**3.2**) and material measures (**3.3**).

3.2 indicating measuring instrument

measuring equipment that displays an indication

NOTE 1 The display can be analogue or digital.

NOTE 2 Values of more than one quantity can be displayed simultaneously.

NOTE 3 A displaying measuring instrument can also provide a record.

Example 1 Analogue mechanical dial gauge

Example 2 Digital calliper

Example 3 Micrometer