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**Technical drawings—
Geometrical tolerancing—
Positional tolerancing**

ICS 01.100.20; 17.040.10

Descriptors : technical drawing, engineering drawings, dimensional tolerances,
designations, tolerances of position

Reference number : JIS B 0025 : 1998 (E)

B 0025 : 1998 (ISO/DIS 5458 : 1994)

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS B 0025 : 1991** is replaced with **JIS B 0025 : 1998**.

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Technical drawings— Geometrical tolerancing— Positional tolerancing

0 Introduction This Japanese Industrial Standard has been prepared based on *ISO/DIS 5458 Technical drawings—Geometrical tolerancing—Positional tolerancing* issued in 1994 without changing the technical contents.

The description underlined with a dotted line in this Standard is not included in the original International Standard.

0.1 The concept of positional tolerancing, described in **JIS B 0021**, is further elaborated in this Standard.

The figures in this Standard serve to illustrate the subject matter only and are not necessarily complete.

Other relevant Standards, such as **JIS B 0022**, **JIS B 0023**, etc., should be taken into consideration when using this Standard.

0.2 For the purposes of this Standard, all dimensions and tolerances on the drawings have been stencilled in upright lettering. It should be understood that these indications could just as well be written in free-hand or inclined (italic) lettering without altering the meaning of the indications.

For the presentation of lettering (proportions and dimensions), see **JIS Z 8313-1** and **JIS Z 8313-10**.

1 Scope This Standard describes the principle of positional tolerancing for the location of regular and irregular features. However for clarity, only regular-shaped features such as holes, bolts, studs or pins, parallel-sided slots, key and keyways have been shown.

Positional tolerancing may also be applied to the location of a point, a straight line, or a plane surface. However, profile tolerancing must be used when lines are not intended to be straight or surfaces are not intended to lie in a plane, see **ISO 1660:1987 Technical drawings—Dimensioning and tolerancing of profiles**.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

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

Remarks : The provisions cited from **ISO 1101:1983, Technical drawings—Geometrical tolerancing—Tolerances of form, orientation, location and run-out—Generalities, definitions, symbols, indications on drawings** are equivalent to the relevant provisions in this said standard.

ISO 1660:1987 *Technical drawings—Dimensioning and tolerancing of profiles*

JIS B 0023 *Technical drawings—Geometrical tolerancing—Maximum material requirement and least material requirement*

Remarks : Section 1 of this standard above is identical to ISO 2692 : 1988, *Technical drawings—Geometrical tolerancing—Maximum material principle*.

JIS Z 8313-0 *Technical drawings—Lettering—Part 0 : General requirements*

Remarks : The provisions cited from ISO 3098-1 : 1996, *Technical product documentation—Lettering—Part 0 : General requirements* are equivalent to the relevant provisions in this said standard.

JIS Z 8313-1 *Technical drawings—Lettering—Part 1 : Currently used characters*

Remarks : The provisions cited from ISO 3098-1 : 1974, *Technical drawings—Lettering—Part 1 : Currently used characters* are equivalent to the relevant provisions in this said standard.

JIS Z 8313-2 *Technical drawings—Lettering—Part 2 : Greek characters*

Remarks : The provisions cited from ISO 3098-2 : 1974, *Technical drawings—Lettering—Part 2 : Greek characters* are equivalent to the relevant provisions in this said standard.

ISO 3098-3 : 1987 *Technical drawings—Lettering—Part 3 : Diacritical and particular marks for the Latin alphabet*

ISO 3098-4 : 1984 *Technical drawings—Lettering—Part 4 : Cyrillic characters*

ISO 3098-5 : 1996 *Technical product documentation—Lettering—Part 5 : CAD lettering of the Latin alphabet, Numerals and marks*

JIS Z 8313-10 *Technical drawings—Lettering—Part 10 : Japanese characters (Kana and Kanji)*

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

Remarks : The provisions cited from ISO 5459 : 1981, *Technical drawings—Geometrical tolerancing—Datums and datum-systems for geometrical tolerances* are equivalent to the relevant provisions in this said standard.

JIS B 0024 *Technical drawings—Fundamental tolerancing principle*

Remarks : The provisions cited from ISO 8015 : 1985, *Technical drawings—Fundamental tolerancing principle* are equivalent to the relevant provisions in this said standard.

3 Establishment of positional tolerances

3.1 General The primary constituents are theoretically exact dimensions, tolerance zones and datums.

3.2 Fundamental principle In the method of positional tolerancing, theoretically exact dimensions and positional tolerances determine the location of features, such as points, axes and median planes, relative to each other or in relation to one or more datums. The tolerance zone is symmetrically disposed about the theoretically exact location.

Remarks : By virtue of this principle positional tolerances do not accumulate where theoretically exact dimensions are arranged in a chain (see