

JIS

JAPANESE INDUSTRIAL STANDARD

Datums and Datum-systems
for Geometrical Tolerances

JIS B 0022—1984

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JAPANESE INDUSTRIAL STANDARD

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Datums and Datum-systems for Geometrical Tolerances B 0022-1984

1. Scope

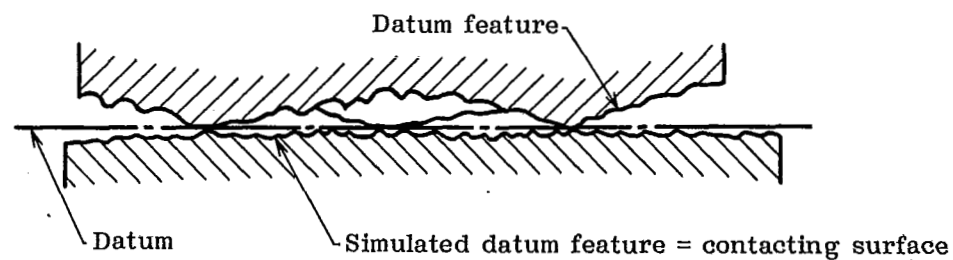
This Japanese Industrial Standard specifies the methods of diagrammatical indication and establishment of datums and datum-systems used when geometrical tolerances are specified.

2. Definition

The main terms used in this standard shall mean as follows except as specified in JIS B 0021 and JIS B 0621.

- (1) datum A theoretically exact geometrical reference established for controlling the tolerance zone when specifying a geometrical tolerance for a related feature (Fig. 1). For example, where this reference is a point, straight line, axial straight line, plane, or median plane, these are respectively termed a datum point, datum straight line, datum axial straight line, datum plane, and datum median plane.

Fig. 1



- (2) datum feature The real feature of the considered object used for establishing a datum (for example, the surface or hole of a part) (Fig. 1).

Remark: Since datum features have errors derived from their working, etc., form tolerances suitable for the datum features are specified where required.

- (3) simulated datum feature A real surface having a sufficiently precise form which is used in contact with the datum feature for establishing a datum (for example, a surface plate, bearing, or mandrel) (Fig. 1).

Remark: The simulated datum feature is a feature made by practically realizing the specified datum when conducting working, measurement, or inspection.

- (4) common datum A single datum established by two datum features.

- (5) datum-system A group of datums consisting of two or more individual datums used in combination as the reference for a toleranced feature.

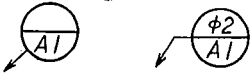
Applicable Standards, Corresponding International Standard and Reference Standards: See page 15.

- (6) datum target A point, line, or limited area on the considered object which is made contact the apparatus, appliance, or the like for working, measurement, and inspection in order to establish a datum.

3. Symbols

The symbols of datums and datum targets shall be as shown in Table 1.

Table 1. Symbols of Datums and Datum Targets.

Item		Symbol ⁽¹⁾	Clause to be referred to
Letter symbol for indicating datum			5.
Datum triangle ⁽²⁾			5.
Datum target frame			6.
Symbol for datum target	Point		6.
	Line		
	Area		

Notes ⁽¹⁾ The letter symbols and numerical values in the Table are shown for example.

⁽²⁾ Refer to JIS B 0021.

4. Fundamental Rules for Specifying Datums or Datum-systems

4.1 Specification by Single Datum Orientation tolerances, run-out tolerances, and the like shall generally be specified in relation to single datums.

4.2 Specification by 3-Plane Datum-system Location tolerances shall generally be specified in relation to 3 datum planes perpendicular to each other. The datum-system constituted by those 3 planes are termed 3-plane datum-system. In this case, the datum-system shall be specified by determining the sequence of the datums considering the simplicity of meaning of the datums. The datum planes constituting a 3-plane datum-system are termed respectively the primary datum plane, secondary datum plane, and tertiary datum plane according to their sequence (Fig. 2).

The simulated datum features corresponding to those datums are respectively termed the primary simulated datum plane, secondary simulated datum plane, and tertiary simulated datum plane (Fig. 3).

Remark: Where a 3-plane datum-system is applied to an object of cylindrical form, the combination of three planes shall be constituted by two planes which contain the axial straight line and intersect each other at a right angle and a plane which intersects the axial straight line at a right angle (Fig. 4).

Fig. 2

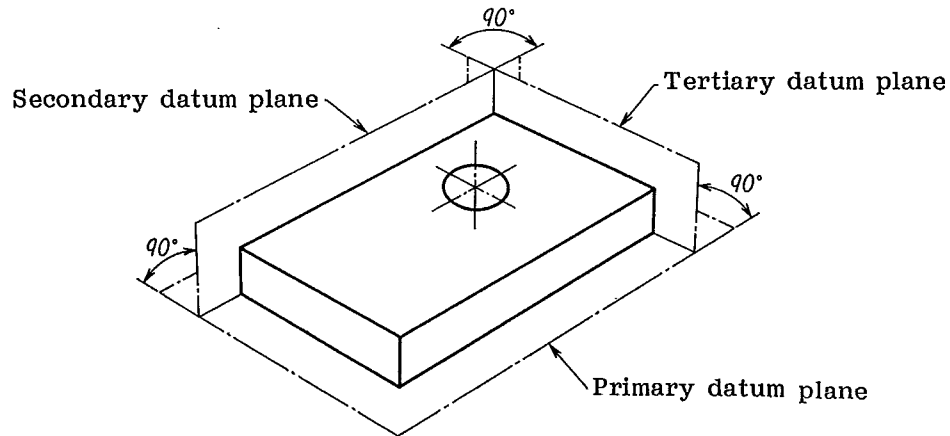


Fig. 3

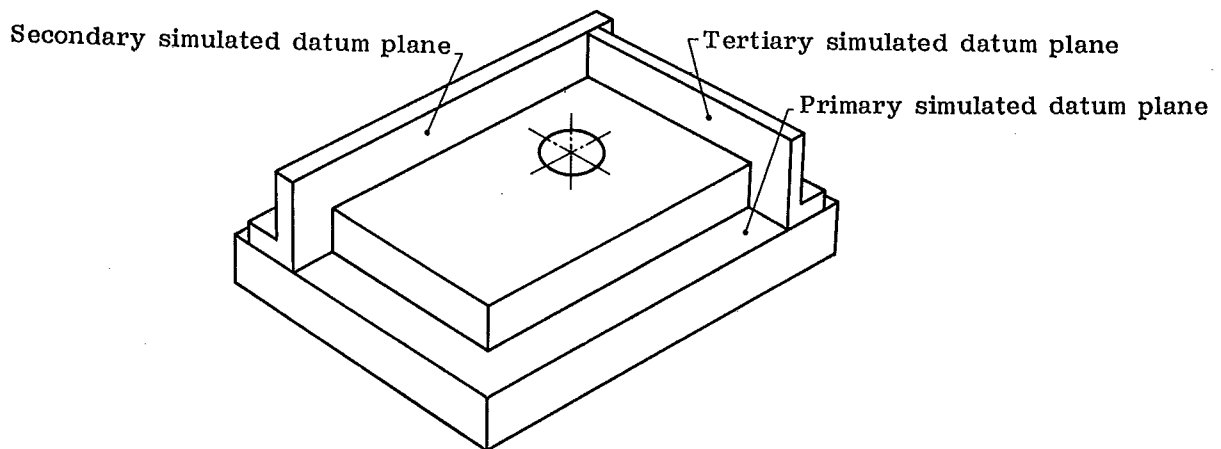
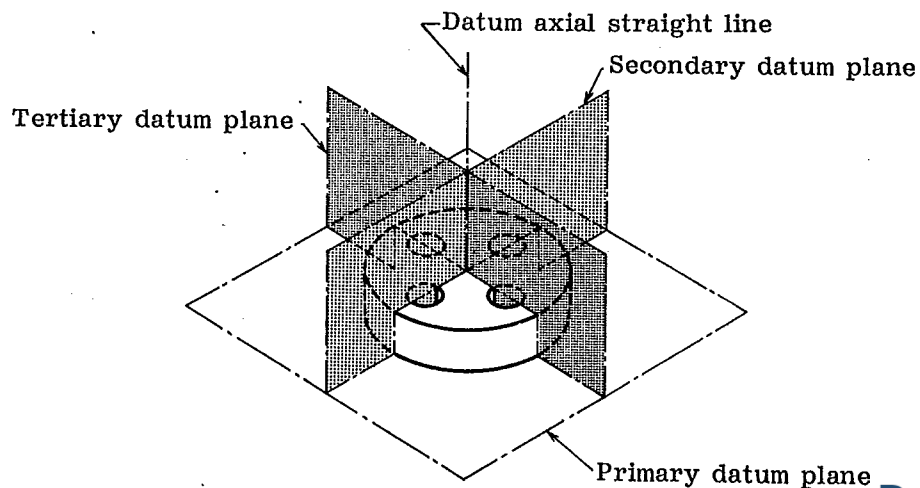


Fig. 4



5. Method of Diagrammatical Indication of Datums and Datum-systems

5.1 Method of Diagrammatical Indication for Indicating Datums Datum symbols for indicating datums shall be represented as follows:

- (1) Method of Attaching Datum Triangle Details of the method of attaching the datum triangle shall be as specified in JIS B 0021 (Fig. 5 and Fig. 6).

Fig. 5

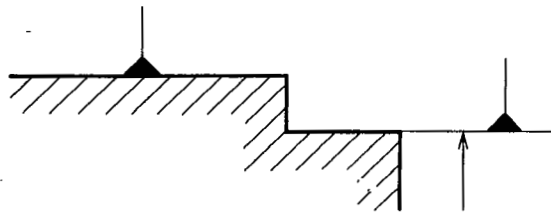
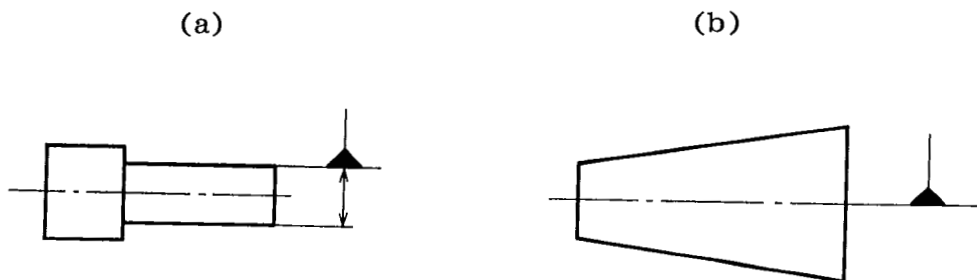


Fig. 6



- (2) Method of Indicating Datum by Letter Symbol The details of the method of indicating datums by letter symbols shall be as specified in JIS B 0021 (Fig. 7).

Fig. 7

