JIS

JAPANESE INDUSTRIAL STANDARD

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JIS Z 8315-3 : 1999

(ISO 5456-3 : 1996)

Technical drawings — Projection method — Part 3: Axonometric representations

ICS 01.100.01

Descriptors : engineering drawings, projection (drawing)

Reference number : **JIS Z 8315-3 : 1999 (E)**

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS Z 8315** : 1984 is withdrawn and replaced with **JIS Z 8315** group. By this establishment, **JIS Z 8315** group becomes identical with the corresponding part of **ISO 5456**, *Technical drawings — Projection method.* **JIS Z 8315** group, inclusive of forward and tittle, is named *Technical drawings — Projection methods*, and consists of the following parts.

Part 1 : *Synopsis*
Part 2 : *Orthographic*
Part 3 : *Axonometric representations*
Part 4 : *Central projection*

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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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JIS Z 8315-3 : 1999
(ISO 5456-3 : 1996)

Technical drawings—Projection method—

Part 3 : Axonometric representations

Introduction This Japanese Industrial Standard has been prepared based on "ISO 5456-3, *Technical drawings — Projection methods — Part 3 : Axonometric representations*" issued in 1996 without changing the technical contents.

Axonometric representations are simple pictorial representations obtained by projecting the object to be represented from an infinitely distant point (projection centre) on a single projection plane (normally the drawing surface). This kind of parallel projection gives an adequate approximation for distant views.

The resulting representation depends on the shape of the object and on the relative positions of the projection centre, the projection plane and the object itself.

Among the infinite possibilities of axonometric representation, only a few types are recommended for technical drawings in all fields of technical activities (mechanical, electrical, construction, etc.).

Axonometric representations are not as commonly used in technical drawings as are orthographic representations.

1 Scope This Standard specifies basic rules for the application of the recommended axonometric representation for all types of technical drawings in all technical fields in accordance with the synopsis given in JIS Z 8315-1.

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this part of JIS Z 8315. The most recent editions (including amendment) of the standards indicated below shall be applied.

JIS Z 8316 *Technical drawings—General principles of presentation*

Note: The provisions cited from ISO 128 : 1982, *Technical drawings — General principles of presentation* are equivalent to the relevant provisions in the said standard.

JIS Z 8317 *Technical drawing—Dimensioning*

Note: The provisions cited from ISO 129 : 1985, *Technical drawings—Dimensioning—General principles, definitions, methods of execution and special indications* are equivalent to the relevant provisions in the said standard.

JIS Z 8313-1 *Technical drawings—Lettering—Part1 : Currently used characters*
Note: This said standard is identical to ISO 3098-1:1974, *Technical drawings —Lettering—Part 1 : Currently used characters.*

JIS Z 8315-1 *Technical drawings—Projection methods—Part 1 : Synopsis*
Note: This said standard is identical to ISO 5456-1:1996, *Technical drawings —Projection methods—Part 1 : Synopsis.*

JIS Z 8114 *Technical product documentation—Terms relating to technical drawings*
Note: The provisions cited from ISO 10209-1:1992, *Technical product documentation—Vocabulary—Part 1 : Terms relating to technical drawings : general and types of drawings* are equivalent to the relevant provisions in the said standard.

The provisions cited from ISO 10209-2:1993, *Technical product documentation—Vocabulary—Part 2 : Terms relating to projection methods* are equivalent to the relevant provisions in the said standard.

3 Definitions For the purposes of this Standard, the definitions given in JIS Z 8315-1 and JIS Z 8114 apply.

4 General The general principles of presentation given in JIS Z 8316 shall be followed.

4.1 Position of the coordinate system The position of the coordinate axes shall be chosen, by convention, so that one of the coordinate axes (the Z-axis) is vertical.

4.2 Position of the object The object to be represented is located with its principal faces, axes and edges parallel to the coordinate planes. The object shall be orientated to show the principal view and the other views that would preferably be chosen when representing the same object in orthogonal projections.

4.3 Axes of symmetry Axes and traces of planes of symmetry of the object shall not be drawn unless necessary.

4.4 Hidden contours and edges Hidden contours and edges should preferably be omitted.

4.5 Hatching Hatching to indicate a cut or section shall be drawn preferably at an angle of 45° with respect to axes and contours of the cut or section (see Fig. 1).

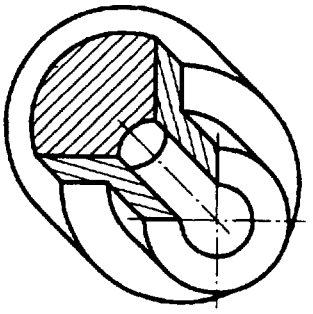

Fig.1

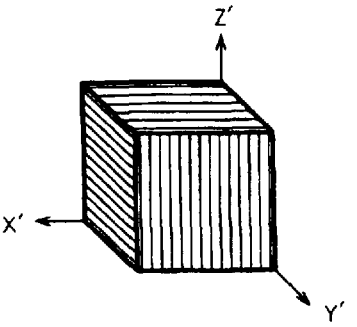

Fig.2

Haching to indicate planes parallel to the coordinate planes shall be drawn parallel to the projected coordinate axis, as shown in Fig. 2.

4.6 Dimensioning Dimensioning of axonometric representations is normally avoided. If, for special reasons, dimensioning is considered necessary, the same rules given for orthogonal projections (JIS Z 8317 and JIS Z 8313-1) shall be used (see Figs. 6 and 12).

5 Recommended axonometries Recommended axonometries for technical drawings are :

— isometric axonometry (see 5.1) ;
— dimetric axonometry (see 5.2) ;
— oblique axonometry (see 5.3) ;

Coordinate axes X, Y, Z are to be indicated by upper case letters. If other items (e.g. dimensions) have to be indicated in a table or drawing, lower-case letters x, y, z shall be used for better differentiation (for examples see JIS B 0012-2).