JAPANESE INDUSTRIAL STANDARD JIS B 0401-1986 System of limits and fits

1995. 2.

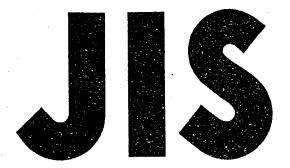
ERRATA

Page	Position	Wrong	Correct
1772	Formula, Position	Geometrical mean of	Geometrical mean of
23	of tolerance zone	values for E and F	values for E and F
	"ef" of Shaft in	or f and g	or e and f
	Appendix 1 Table 5		
	Formula, Position	Geometrical mean of	Geometrical mean of
23	of tolerance zone	values for F and G	values for F and G
	"fg" of Shaft in	or e and f	or f and g
	Appendix 1 Table 5		

Remarks: This errata is for correcting the fourth edition of this Standard.

Japanese Standards Association

UDC 621.753.1/.2



JAPANESE INDUSTRIAL STANDARD

System of Limits and Fits JIS B 0401-1986

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JAPANESE INDUSTRIAL STANDARD

JIS

System of Limits and Fits

В 0401-1986

1. Scope

This Japanese Industrial Standard specifies the system of limits and fits of features having basic sizes up to 3150 mm including.

- Remarks 1. The limit system of this Standard mainly deals with the cylindrical features but also can be applied to features other than the cylinder.
 - 2. The fit system of this Standard applies only to fits of simple geometrical forms, such as cylindrical features, or the feature containing or contained by two parallel planes, etc.
 - 3. When there is a standard (1) specifying the limit system for specific working method, that standard may be applied, or when special precision is not required for practical function, the permissible deviations without tolerance indication (2) may be applied.
 - Notes (1) For example, JIS B 0415.
 - (2) For example, JIS B 0405.

2. Definitions

The definitions of principal terms used in this Standard shall be as follows:

- (1) feature The portion of a mechanical part to which the system of limits and fits is applied.
- (2) internal feature Feature forming the inside of an object.
- (3) external feature Feature forming the outside of an object.

Applicable Standards, Corresponding International Standard and Reference Standards: See page 38.

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- (4) hole This refers mainly to the cylindrical internal feature but also includes the internal feature with a non-cylindrical section.
- (5) shaft This refers mainly to the cylindrical external feature but also includes the external feature with a non-cylindrical section.
- (6) size Quantity expressing magnitude of a feature. For example, diameters of a hole and a shaft and it is, in general, expressed in the unit of mm.
- (7) actual size Size of feature as practically obtained.
- (8) limits of size The two extreme permissible sizes of a part determined so that the actual size should lie between them, i.e., the maximum limit of size and the minimum limit of size (Fig. 1).
- (9) maximum limit of size The largest size permissible to the feature (Fig. 1).
- (10) minimum limit of size $\overline{\text{(Fig. 1)}}$. The smallest size permissible to the feature
- (11) basic size Size to be referred to as the standard to which the upper and lower deviations are assigned to form the limits of size (Fig. 1 and Fig. 2).
 - Remark: The basic size shall be expressed by integers or decimals. Example: 32, 15, 8.75, 0.5
- (12) <u>deviations</u> Algebraical difference between the size (the actual size, the limits of size, etc.) and the corresponding basic size, i.e., (size) (basic size).
- (13) limit system System of standardized tolerances and deviations.
- (14) upper deviation Algebraical difference between the maximum limit of size and the corresponding basic size, i.e., (maximum limit of size) (basic size) (Fig. 1 and Fig. 2).
 - Remark: The upper deviation of the hole shall be indicated by symbol ES and that of the shaft by symbol es (see 4.1.4).
- (15) lower deviation Algebraical difference between the minimum limit of size and the corresponding basic size, i.e., (minimum limit of size) (basic size) (Fig. 1 and Fig. 2).
 - Remark: The lower deviation of the hole shall be indicated by symbol EI and that of the shaft by symbol ei (see 4.1.4.).
- (16) tolerance Difference between the maximum limit of size and the minimum limit of size, i.e., the difference between the upper deviation and the lower deviation (Fig. 1 and Fig. 2).
- (17) zero line In a graphical representation of limits and fits, straight line which represents the basic size, and to which the deviations are referred (Fig. 1 and Fig. 2).

- (18) fundamental deviation The deviation which defines the position of the tolerance zone in relation to the zero line. It is either the upper deviation or the lower deviation and ordinarily the one nearer to the zero line.
- (19) standard tolerance Any tolerance belonging to this system of limits and fits.

Remark: The standard tolerance shall be indicated by symbol IT.

- (20) grade of tolerance In this system of limits and fits, a group of tolerances belonging to the same level of accuracy for all basic sizes.
 - Remark: The grade of tolerance shall be indicated by the symbol IT followed by a number representing the grade, for example, IT 7.
- (21) tolerance zone In a graphical representation of tolerances, zone comprised between two lines representing the maximum and minimum limits of size and defined by the magnitude of the tolerance and by its position in relation to the zero line (Fig. 2).
- (22) tolerance zone class Combination of the position of a tolerance zone and the grade of the tolerance.

Fig. 1

