

Rolling bearings — Symbols for quantities

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National foreword

This British Standard reproduces verbatim ISO 15241:2001 and implements it as the UK national standard.

The UK participation in its preparation was entrusted to Technical Committee MCE/7, Rolling bearings, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15241 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

Rolling bearings — Symbols for quantities

1 Scope

This International Standard defines the presentation of symbols for physical quantities — dimensions, dimensional tolerances, accuracy, load ratings, life, etc. — in the field of rolling bearings. These symbols are primarily intended for use in ISO Standards and ISO documents relating to rolling bearings, but they are also suitable for use in other printed materials such as catalogues, drawings and pamphlets.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 31-0:1992, *Quantities and units — Part 0: General principles*

ISO 31-11:1992, *Quantities and units — Part 11: Mathematical signs and symbols for use in the physical sciences and technology*

ISO 281:1990/Amd. 2:2000, *Rolling bearings — Dynamic load ratings and rating life — Amendment 2: Life modification factor a_{XYZ}*

ISO 1132-1:2000, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 5593:1997, *Rolling bearings — Vocabulary*

3 Symbols for quantities

3.1 Principles of symbol system

The following principles have been applied in this International Standard.

- Principles of the symbol system are generally in accordance with ISO 31-0 and ISO 31-11.
- Symbols for physical quantities used in the field of rolling bearings are defined as quantities in physics. Symbols for dimensionless values such as coefficients, factors and parameters are thus also involved. Mathematical variables are also included, e.g. probability (n).
- Subscripts of subscripts should not be adopted; e.g. the subscript letters “dmp” of V_{dmp} should be printed in the same point size. The form $V_{d_{mp}}$ should not be used (see Figure 1).
- Superscripts should not be used.

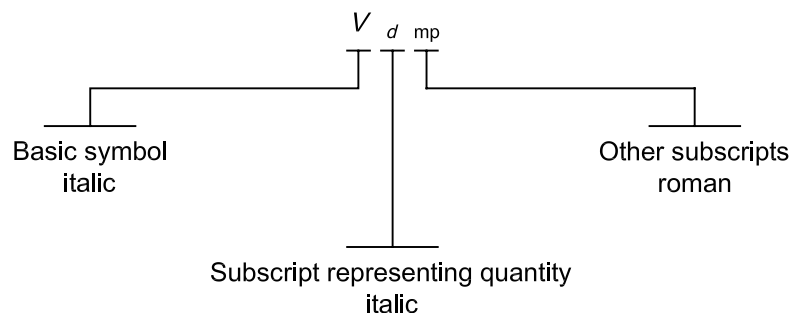


Figure 1 — Principle of symbols

3.2 Symbols

The symbols for quantities are shown by basic symbols, which are single letters from the Latin or Greek alphabet, or basic symbols with subscripts, composed of one or more letters of the Latin alphabet or Arabic numerals. They are not followed by a full stop.

3.3 Basic symbols

Basic symbols represent physical quantities and may sometimes represent different quantities. The typical basic symbols are shown in Table 1.

3.4 Subscripts

Subscripts appended to a basic symbol modify the basic physical quantity with respect to properties, feature, numbering, etc. The subscripts currently used are shown in Table 2. Subscripts representing physical quantities have the same typography as the basic symbols (e.g. V_{dmp} , Δ_{ds}).

3.5 Style of printing symbols

Basic symbols are printed in italic (sloping) type with serifs. Subscripts representing physical quantities are printed in italic type with serifs. Subscripts representing numbers and other symbols are printed in roman (upright) type, e.g. e (with respect to outer ring), r (radial), d (with respect to bore). All subscript characters should be of the same point size.

EXAMPLE 1 In V_{dmp} (variation of mean bore diameter), subscript “ d ” represents “bore diameter” and is printed in italic type. Subscripts “ m ” representing “mean” and “ p ” representing “in a single plane” are printed in roman type. The subscript characters have the same point size.

EXAMPLE 2 In S_d (perpendicularity of inner ring face with respect to the bore), “ d ” represents “per bore surface” and is printed in roman type.

4 Classification of symbols for quantities

Symbols are classified as follows in Tables 3 to 10.

- Dimensions and features for bearings, rings and washers (Table 3).
- Dimensions and tolerances for bearings, rings and washers (Table 4).
- Running accuracy for bearings, rings and washers (Table 5).
- Dimensions and tolerances for subunits (Table 6).