

Technical drawings — Roller bearings

Part 2. Detailed simplified representation

The European Standard EN ISO 8826-2 : 1997 has the status of a
British Standard

ICS 01.100.20; 21.100.20



National foreword

This British Standard is the English language version of EN ISO 8826-2 : 1997. It is identical with ISO 8826-2 : 1994.

The UK participation in its preparation was entrusted to Technical Committee TDE/4, Engineering drawing, Metrology, Precision measurement and all related documentation, 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.

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled 'International Standards Correspondence Index', or by using the 'Find' facility of the BSI Standards Electronic Catalogue.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii and iii, a blank page, pages 1 to 10, the annex ZA page, a blank page, an inside back cover and a back cover.

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 December 1997

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ISBN 0 580 28776 9

Amendments issued since publication

Amd. No.	Date	Text affected

ICS 01.100.20; 21.100.20

Descriptors: See ISO document

English version

Technical drawings - Rolling bearings - Part 2: Detailed
simplified representation (ISO 8826-2:1994)

Dessins techniques - Roulements - Partie 2:
Représentation simplifiée particulière (ISO 8826-2:1994)

Technische Zeichnungen - Wälzlager - Teil 2: Detaillierte
vereinfachte Darstellung (ISO 8826-2:1994)

This European Standard was approved by CEN on 12 September 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard from Technical Committee ISO/TC 10 "Technical drawings, product definition and related documentation" of the International Organization for Standardization (ISO) has been taken over as an European Standard by CEN/CS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 8826-2:1994 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

INTERNATIONAL
STANDARD

ISO
8826-2

First edition
1994-09-01

Technical drawings — Rolling bearings —
Part 2:
Detailed simplified representation

Dessins techniques — Roulements —
Partie 2: Représentation simplifiée particulière



Reference number
ISO 8826-2:1994(E)

S

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.

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.

International Standard ISO 8826-2 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation*.

ISO 8826 consists of the following parts, under the general title *Technical drawings — Rolling bearings*:

- *Part 1: General simplified representation*
- *Part 2: Detailed simplified representation*

Annex A of this part of ISO 8826 is for information only.

Descriptors: drawings, technical drawings, bearings, rolling bearings, graphic methods.

Introduction

ISO 8826 provides rules for the simplified representation of rolling bearings.

The principle of drawing practice is to depict the object to scale using lines. In simplified representations, only essential features are shown, preferably in outline (in order to save time and effort).

The degree of simplification depends on the kind of object represented, the scale of the drawing and the purpose of the documentation. This means that either a general simplified representation or a detailed one may be used. A detailed representation shows more details of rolling bearings, for example the number of rows or the possibility of alignment.

In order to avoid misunderstandings, only one kind of simplification, either the general or the detailed simplified representation, should be used on a drawing.

Technical drawings — Rolling bearings —

Part 2: Detailed simplified representation

1 Scope

This part of ISO 8826 specifies a detailed simplified representation for various rolling bearings. This representation should be used in cases where it is not necessary to show the exact shape and details of the rolling bearings, for example in assembly drawings.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8826. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8826 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 15:1981, *Rolling bearings — Radial bearings — Boundary dimensions — General plan.*

ISO 104:—¹⁾, *Rolling bearings — Thrust bearings — Boundary dimensions, general plan.*

ISO 355:1977, *Rolling bearings — Metric tapered roller bearings — Boundary dimensions and series designations.*

ISO 582:—²⁾, *Rolling bearings — Metric series — Chamfer dimension limits.*

ISO 1206:1982, *Needle roller bearings — Light and medium series — Dimensions and tolerances.*

ISO 3030:1974, *Needle roller bearings — Needle roller and cage assemblies — Metric series — Part 1: Radial needle roller and cage assemblies — Boundary dimensions and tolerances.*

ISO 3031:1979, *Needle roller bearings — Thrust needle roller and cage assemblies, thrust washers — Dimensions and tolerances.*

ISO 3245:1974, *Rolling bearings — Needle roller bearings, drawn cup, without inner ring — Metric series — Boundary dimensions and tolerances.*

ISO 8443:1985, *Radial ball bearings with flanged outer ring — Flange dimensions.*

ISO 8826-1:1989, *Technical drawings — Rolling bearings — Part 1: General simplified representation.*

ISO 9628:1992, *Rolling bearings — Insert bearings and eccentric locking collars.*

1) To be published. (Revision of ISO 104:1979)

2) To be published. (Revision of ISO 582:1979)

3 Method of representation

3.1 General rules

See ISO 8826-1.

The space on a drawing where a rolling bearing is located shall be circumscribed by means of a square or rectangle (even if there is no inner or outer ring respectively).

3.2 Elements of detailed simplified representation for rolling bearings

The elements of detailed simplified representation for rolling bearings are given in table 1.

Examples of combinations of bearing features (according to table 1) and load-bearing characteristics are given in table 2.

In representations perpendicular to the bearing axis, the rolling element may be shown as a circle, regardless of its actual shape (ball, roller, needle, etc.) and size (see figure 1).

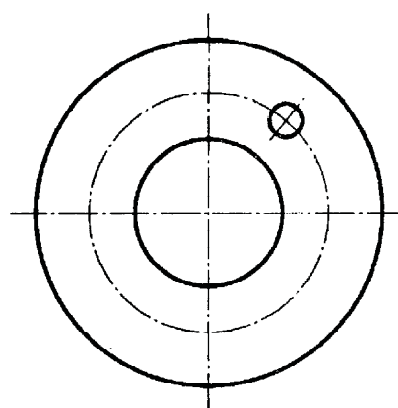


Figure 1

3.3 Detailed simplified representation

The detailed simplified representation of rolling bearings is shown in tables 3 to 6.

Roller bearings shown in tables 3 to 5 are always depicted in the space above the horizontal axis of the bearing, while table 6 refers to the vertical axis of the bearing.

Table 1 — Elements of detailed simplified representation for rolling bearing features

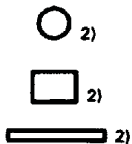
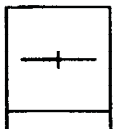
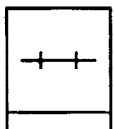
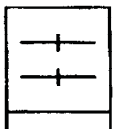
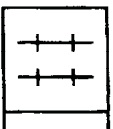
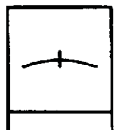
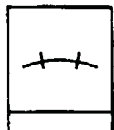
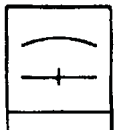
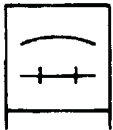
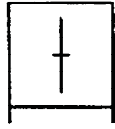
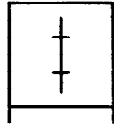
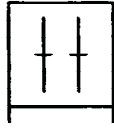
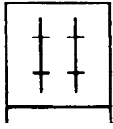
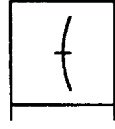
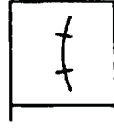
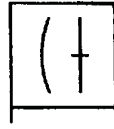
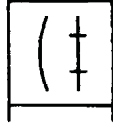
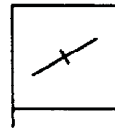
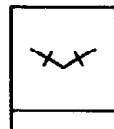
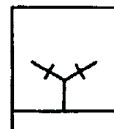
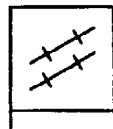
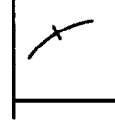
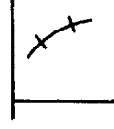
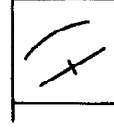
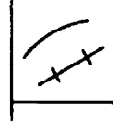
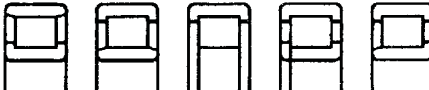
No.	Element	Description	Application
1.1	— 1)	Long continuous straight line	Line representing the axis of the rolling element, without possibility of alignment
1.2	⌒ 1)	Long continuous arc of circle	Line representing the axis of the rolling element, with possibility of alignment
1.3	Alternative indication (examples) 	Short continuous straight line, crossing the long continuous line No. 1.1 or 1.2 at 90° (preferred simplified indication) coincident with the centreline (radial) of each rolling element. circle wide rectangle narrow rectangle	Number of rows and position of the rolling elements ball roller needle-roller, pin
1) This element may be shown inclined, depending on the type of the bearing. 2) Instead of the short continuous straight line, this variation may be used to represent the rolling element.			

Table 2 — Combination of elements in detailed simplified representation

Load-bearing characteristics			Bearing features				
			Two rings		Three rings		
			One row	Two rows	One row	Two rows	
Direction of load	Radial	Alignment	no				
		yes					
	Axial	Alignment	no				
		yes					
	Radial and axial	Alignment	no				
		yes					

NOTE — The rolling bearings shown in this table are always depicted on the drawing in the space above the bearing axis.

Table 3 — Ball and roller bearings

Detailed simplified representation		Application	
		Ball bearings	Roller bearings
		Illustration ¹⁾ and reference ²⁾	Illustration ¹⁾ and reference ²⁾
3.1		 Deep groove ball bearing, single row ISO 15, ISO 8443 Insert bearing ISO 9628	 Cylindrical roller bearing, single row ISO 15
3.2		 Deep groove ball bearing, double row ISO 15	 Cylindrical roller bearing, double row ISO 15
3.3			 Spherical roller bearing, single row ISO 15
3.4		 Ball bearing, self-aligning, double row ISO 15	 Spherical roller bearing, double row ISO 15
3.5		 Separable ball bearing, angular contact, single row ISO 582	 Tapered roller bearing, angular contact, single row ISO 355
3.6		 Non-separable ball bearing, angular contact, double row	

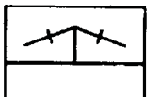
Detailed simplified representation		Application	
		Ball bearings	Roller bearings
		Illustration ¹⁾ and reference ²⁾	Illustration ¹⁾ and reference ²⁾
3.7		 Separable ball bearing, angular contact, double row, two-piece inner ring	
3.8			 Tapered roller bearing, angular contact, double row, two-piece inner ring: ISO 355
1) An incomplete drawing, for information only. 2) If available.			

Table 4 — Needle roller bearings

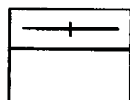
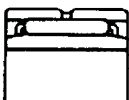
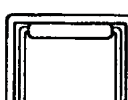
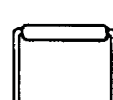
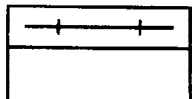
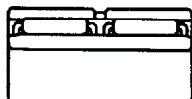
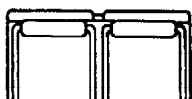
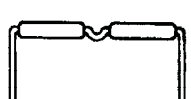
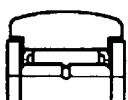
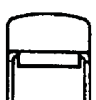
Detailed simplified representation		Illustration ¹⁾ and reference ²⁾		
4.1		 Needle roller bearing, single row ISO 1206	 Drawn cup needle roller bearing without inner ring ISO 3245	 Needle cage ISO 3030
4.2		 Needle roller bearing, double row	 Drawn cup needle roller bearing without inner ring, double row	 Double row needle cage ISO 3031
4.3		   Self-aligning needle roller bearings		
1) An incomplete drawing, for information only. 2) If available.				

Table 5 — Combined bearings

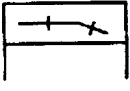
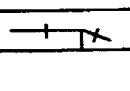
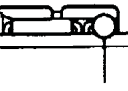
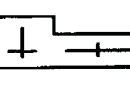
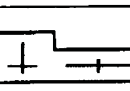
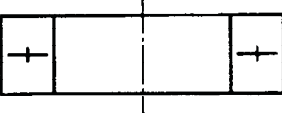
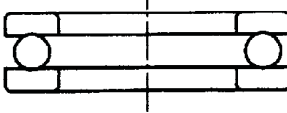
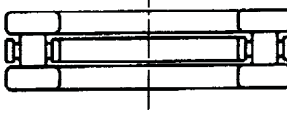
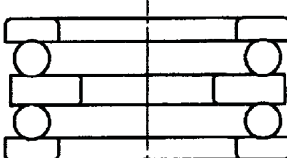
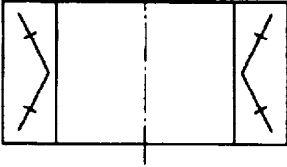
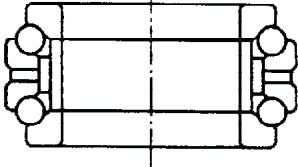
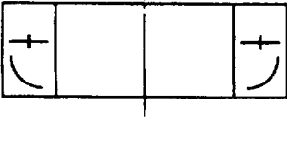
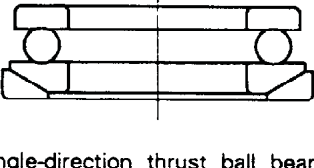
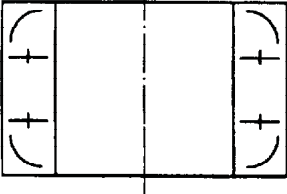
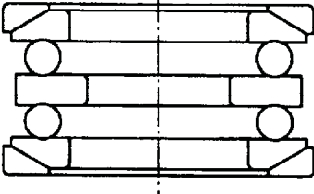
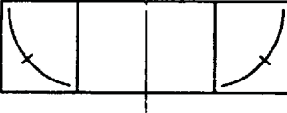
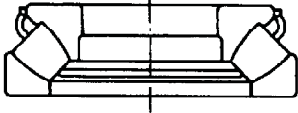
Detailed simplified representation		Illustration ¹⁾	
5.1			Needle roller bearing and ball bearing, both radial contact
5.2			Needle roller bearing and ball bearing, both radial contact with two-piece inner ring
5.3			Needle roller bearing without inner ring with radial contact and ball bearing with axial contact
5.4			Needle roller bearing without inner ring with radial contact and cylindrical roller bearing with axial contact
1) An incomplete drawing, for information only.			

Table 6 — Thrust bearings

Detailed simplified representation		Application	
		Ball bearings	Roller or needle roller bearings
		Illustration ¹⁾ and reference ²⁾	Illustration ¹⁾ and reference ²⁾
6.1			
		Single-direction thrust ball bearing ISO 104	Single-direction thrust roller bearing Thrust needle cage Thrust roller cage
6.2			
		Double-direction thrust ball bearing ISO 104	

Detailed simplified representation		Application	
		Ball bearings	Roller or needle roller bearings
		Illustration ¹⁾ and reference ²⁾	Illustration ¹⁾ and reference ²⁾
6.3		 Angular contact thrust ball bearing	
6.4		 Single-direction thrust ball bearing with one spherical ring	
6.5		 Double-direction thrust ball bearing with two spherical rings	
6.6			 Self-aligning thrust roller bearing ISO 104
1) An incomplete drawing, for information only. 2) If available.			

4 Examples

Examples showing the detailed simplified representation of rolling bearings are given in figures 2 to 5.

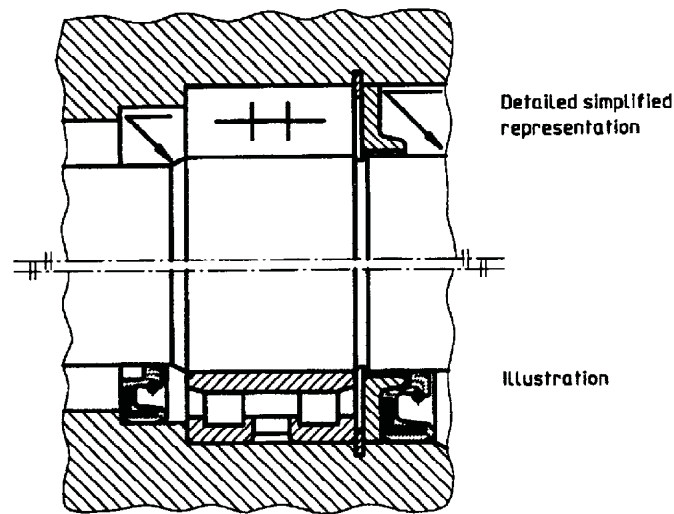


Figure 2

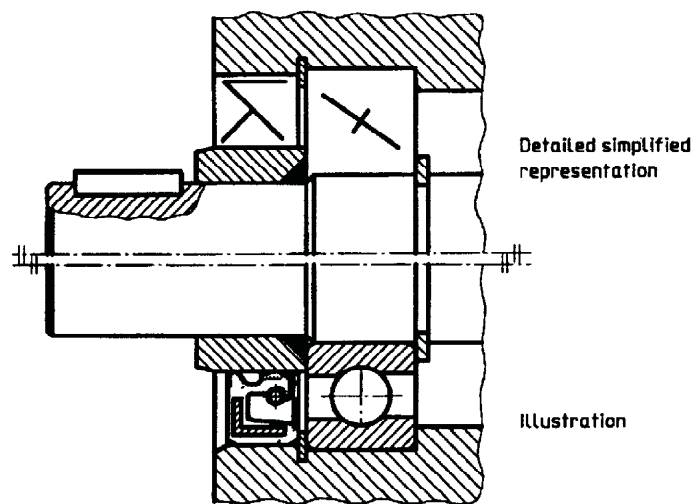


Figure 3

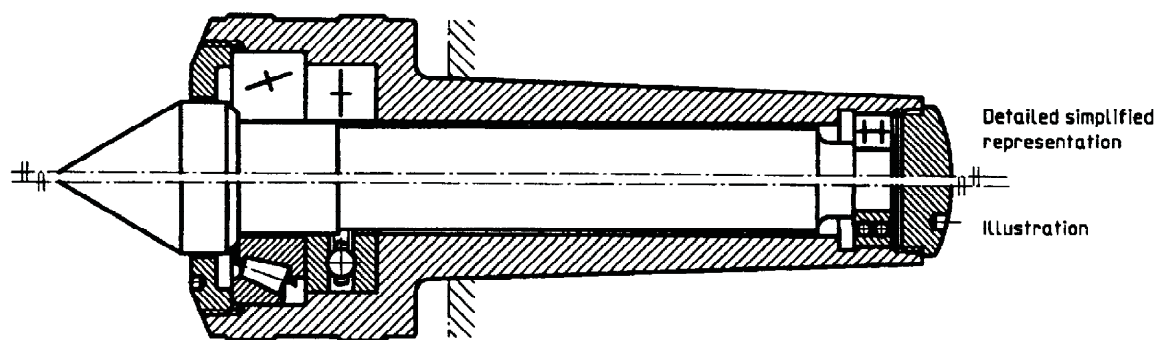


Figure 4

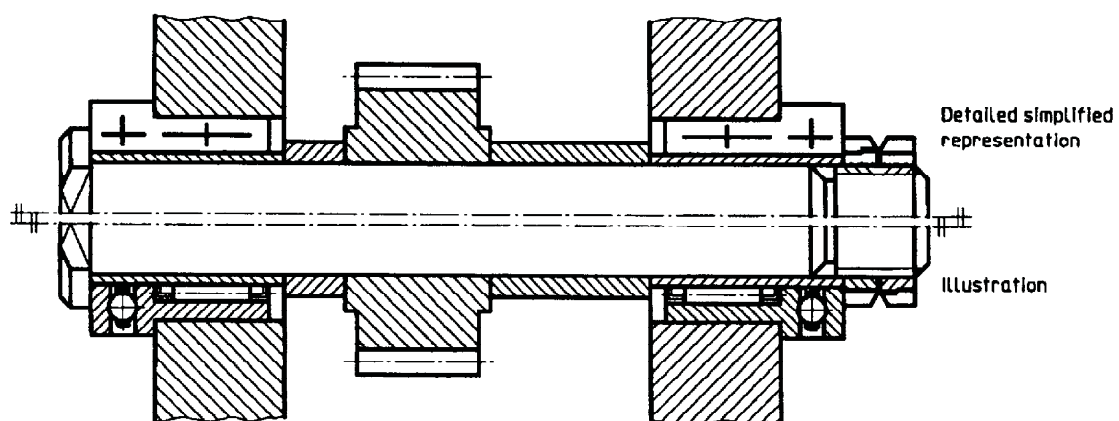


Figure 5

Annex A
(informative)

Bibliography

- [1] ISO 128:1982, *Technical drawings — General principles of presentation*.
- [2] ISO 5593:1984, *Rolling bearings — Vocabulary*.

Annex ZA (normative)
Normative references to international publications
with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 8826-1	1991	Technical drawings - Rolling bearings - Part 1: General simplified representations	EN ISO 8826-1	1995



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