

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

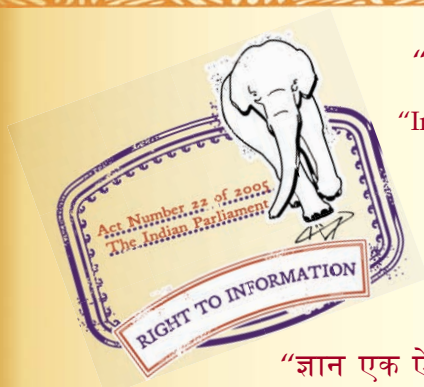
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

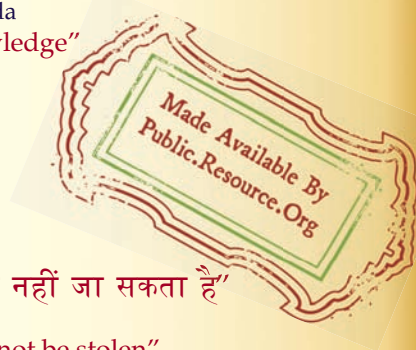
IS 13637-2 (1999): Technical Drawings - Rolling Bearings,
Part 2: Detailed Simplified Representation [PGD 24:
Drawings]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 13637 (Part 2) : 1999

ISO 8826-2 : 1994

(Reaffirmed 2004)

भारतीय मानक

तकनीकी ड्राइंग — रोलिंग बेयरिंग

भाग 2 व्यापक सरलीकृत निरूपण

Indian Standard

TECHNICAL DRAWINGS — ROLLING BEARINGS

PART 2 DETAILED SIMPLIFIED REPRESENTATION

ICS 01.100.20; 21.100.20

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI 110002

September 1999

Price Group 5

NATIONAL FOREWORD

This Indian Standard (Part 2) which is identical with ISO 8826-2:1994 'Technical drawings — Rolling bearings — Part 2 : Detailed simplified representation' issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendation of Drawings Sectional Committee and approval of Light Mechanical Engineering Division Council.

This standard specifies a detailed simplified representation for various rolling bearings. The other part of this series is IS 13637 (Part 1) : 1993 'Technical drawings — Rolling bearings : Part 1 General simplified representations'.

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

The text of ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is especially drawn to the following:

- a) Wherever the words, 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a full point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated :

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 15 : 1981	IS 5669 : 1987 General plan of boundary dimensions for radial rolling bearings	Identical
ISO 104 : 1979	IS 5932 : 1999 Rolling bearings — Thrust bearings — Boundary dimensions, general plan (<i>first revision</i>)	do
ISO 355 : 1977	a) IS 7461 (Part 1) : 1993 General plan of boundary dimensions for tapered roller bearings : Part 1 Single row (<i>second revision</i>)	Technically Equivalent
	b) IS 7461 (Part 2) : 1992 General plan of boundary dimensions for tapered roller bearings : Part 2 Double row bearings (<i>second revision</i>)	do
	c) IS 7461 (Part 3) : 1992 General plan of boundary dimensions for tapered roller bearings : Part 3 Flanged cups (<i>second revision</i>)	do
ISO 582 : 1979	IS 5934 : 1987 Chamfer dimension limits for rolling bearings	Identical
ISO 8443 : 1985	IS 13406 : 1992 Radial ball bearings with flanged outer ring — Flange dimensions	do

(Continued on third cover)

Indian Standard

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).

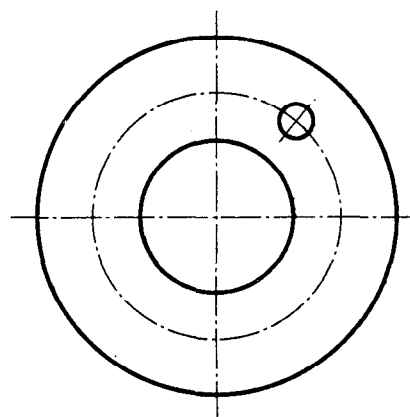


Figure 1

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)  2)  2)  2)	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

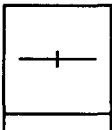
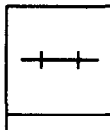
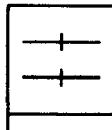
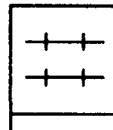
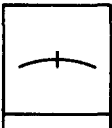
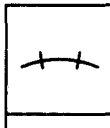
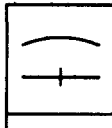
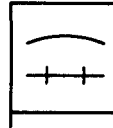
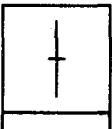
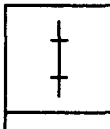
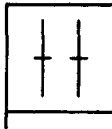
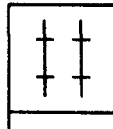
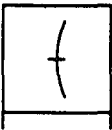
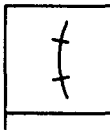
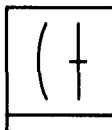
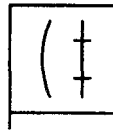
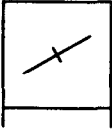
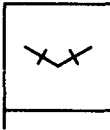
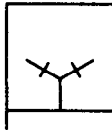
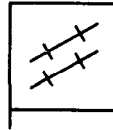
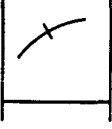
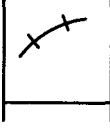
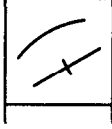
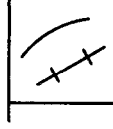
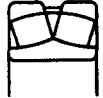
Load-bearing characteristics			Bearing features			
			Two rings		Three rings	
			One row	Two rows	One row	Two rows
Direction of load	Radial	no				
		yes				
	Axial	no				
		yes				
	Radial and axial	no				
		yes				
NOTE — The rolling bearings shown in this table are always depicted on the drawing in 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	

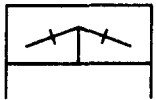
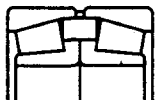
Detailed simplified representation		Application	
		Ball bearings	Roller bearings
		Illustration ¹⁾ and reference ²⁾	Illustration ¹⁾ and reference ²⁾
3.7		 Separable ball bearing, angular contact, double row, two-piece inner ring	
3.8			 Tapered roller bearing, angular contact, double row, two-piece inner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

Table 4 — Needle roller bearings

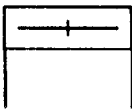
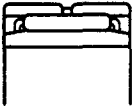
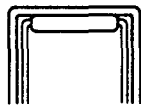
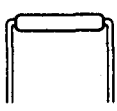
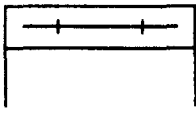
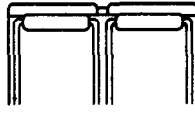
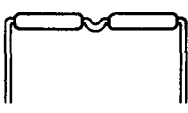
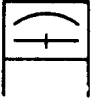
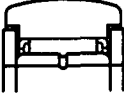
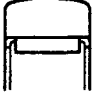
Detailed simplified representation		Illustration ¹⁾ and reference ²⁾		
4.1		 Needle roller bearing, single row ISO 1206	 Drawn cup needle roller bearing without inner ring ISO 3245	 Needle cage ISO 3030
4.2		 Needle roller bearing, double row	 Drawn cup needle roller bearing without inner ring, double 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

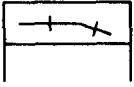
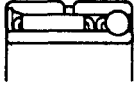
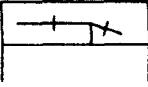
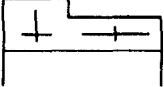
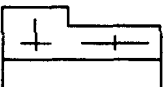
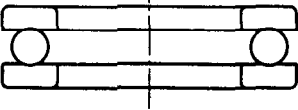
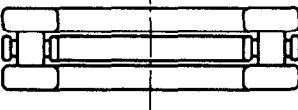
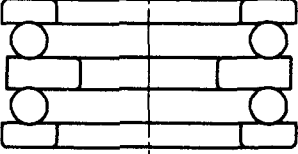
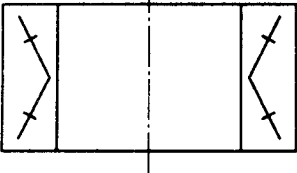
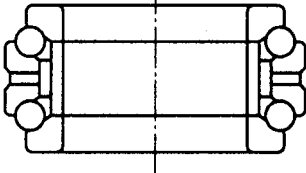
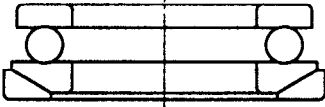
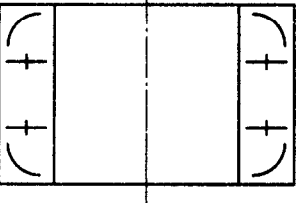
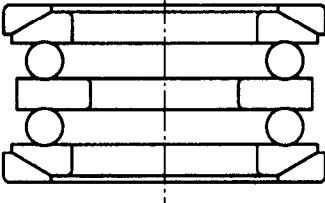
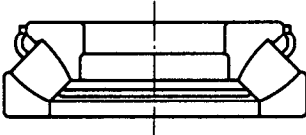
Detailed simplified representation		Illustration ¹⁾	
5.1			Needle roller bearing and ball bearing, both radial contact
5.2			Needle roller bearing and ball bearing, both radial contact with two-piece inner ring
5.3			Needle roller bearing without inner ring with radial contact and ball bearing with axial 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.

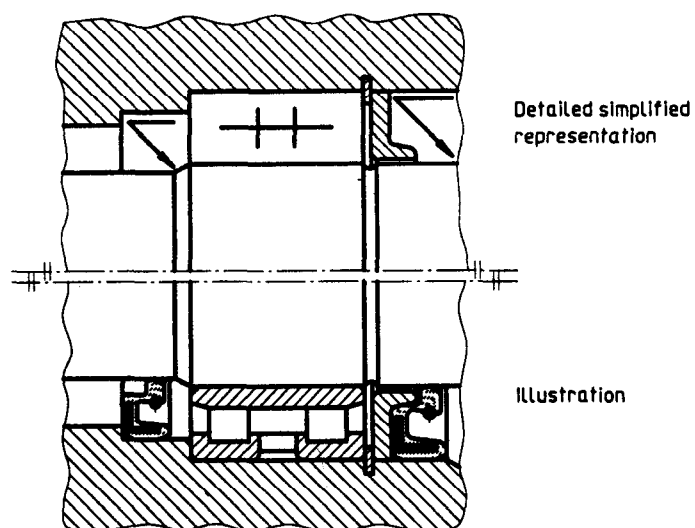


Figure 2

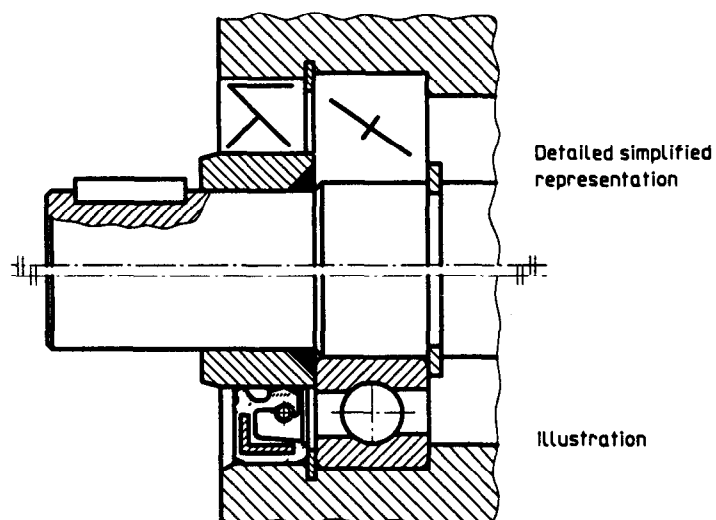


Figure 3

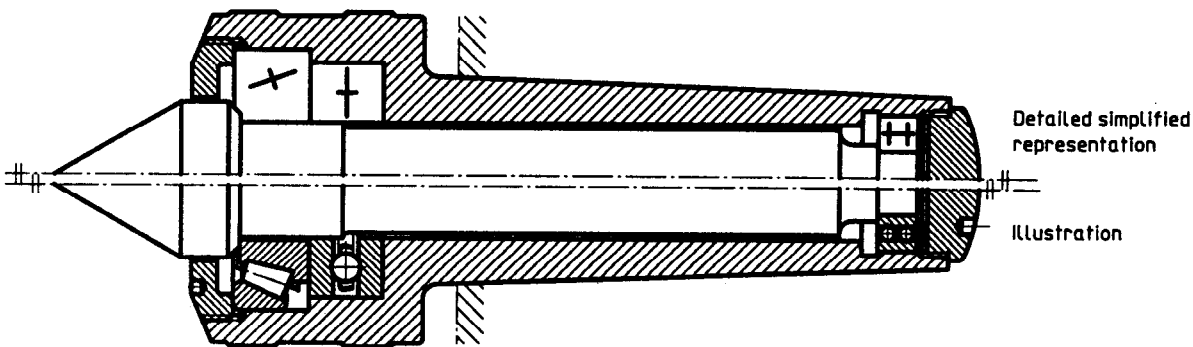


Figure 4

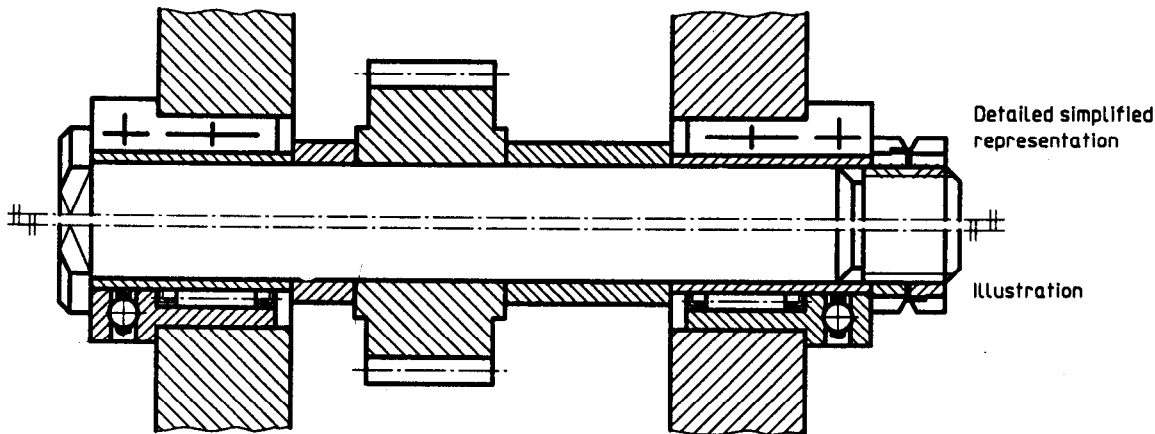


Figure 5

Annex A (informative)

Bibliography

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

(Continued from second cover)

ISO 8826-1 : 1989

IS 13637 (Part 1) : 1993 Technical drawings — Rolling bearings : Part 1 General simplified representations

Identical

The Sectional Committee responsible for formulation of this standard has reviewed the provisions of the following ISO standards to which references have been made in the text, and decided that they are acceptable for use in conjunction with this standard:

- | | |
|-----------------|---|
| 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 9628 : 1992 | Rolling bearings — Insert bearings and eccentric locking collars |

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