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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

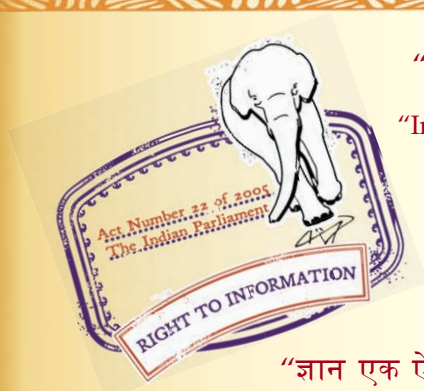
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 13638-2 (1993): Technical drawings - Seals for dynamic application, Part 2: Detailed simplified representations
[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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भारतीय मानक

तकनीकी ड्राइंग — गतिक अनुप्रयोग के लिये अवरोधक

भाग 2 व्यापक सरलीकृत निरूपण

Indian Standard

**TECHNICAL DRAWINGS — SEALS FOR DYNAMIC
APPLICATION**

PART 2 DETAILED SIMPLIFIED REPRESENTATION

UDC 744.43 : 621.762.8

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BUREAU OF INDIAN STANDARDS

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NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 9222-2 : 1989 'Technical drawings — Seals for dynamic application — Part 2 : Detailed simplified representation' issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Drawings Sectional Committee (LM 02) and approval of the Light Mechanical Engineering Division Council.

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 particularly 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 point (.) as the decimal marker.

In this Indian Standard, the following International Standards are referred to. Read in this place the following:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 5597 : 1987	IS 10983 :1984 Recommendations for dimension of housing for seals for reciprocating application	Technically Equivalent
ISO 6194-1 : 1982	IS 5129 (Part 1) : 1987 Rotary shaft radial lip type oil seal units : Part 1 Dimensions (<i>second revision</i>)	Technically Equivalent
ISO 9222-1 : 1989	IS 13638 (Part 1) : 1993 Technical drawings — Seals for dynamic application : Part 1 General simplified representation	Identical

The concerned technical committee has reviewed the provisions of ISO 6547 : 1981 referred in this adopted standard as there is no equivalent Indian Standard available, and has decided that it is acceptable for use in conjunction with this standard.

Indian Standard

TECHNICAL DRAWINGS — SEALS FOR DYNAMIC APPLICATION

PART 2 DETAILED SIMPLIFIED REPRESENTATION

1 Scope

This part of ISO 9222 specifies a detailed simplified representation for various seals. This representation should be used in cases where it is not necessary to show the exact shape and details of the seals, 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 9222. 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 9222 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 5597 : 1987, *Hydraulic fluid power — Cylinders — Housings for piston and rod seals in reciprocating applications — Dimensions and tolerances.*

ISO 6194-1 : 1982, *Rotary shaft lip seals — Part 1: Nominal dimensions and tolerances.*

ISO 6547 : 1981, *Hydraulic fluid power — Cylinders — Piston seal housings incorporating bearing rings — Dimensions and tolerances.*

ISO 9222-1 : 1989, *Technical drawings — Seals for dynamic application — Part 1: General simplified representation.*

3 Method of representation

3.1 General rules

See ISO 9222-1.

3.2 Elements of detailed simplified representation for seals

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

Table 1 — Elements of detailed simplified representation for seals

No.	Element	Description	Application
1.1		Long continuous straight line (parallel to a generating line of the sealing surface)	The static (pressed in, fixed) element (seal or part of the seal or function)
1.2		Long continuous straight line (diagonal to the out-lines) ¹⁾	The dynamic sealing element (lip) or function (part of the seal) In conjunction with symbol No. 1.1, it shows the position of the dynamic sealing side directed against fluids, gases and solid media
1.3		Short continuous straight line (diagonal to the out-lines and at 90° to symbol No. 1.2) ¹⁾	In combination with symbol No. 1.2, dust lips, wipers, etc.
1.4.1		Short continuous angular line pointing to the centre point of the square ¹⁾	Sealing lips of U-cups, V-rings, packing sets, etc.

Table 1 (concluded)

No.	Element	Description	Application
1.4.2		Short continuous straight line pointing to the centre point of the square ¹⁾	Like 1.4.1 for U-cups, V-rings, packing sets, etc.
1.5		T (male)	Contactless seals, for example labyrinth seals
		(T in U)	
1.6		U (female)	
1) An arrowhead may be added to show the sealing direction.			

3.3 Detailed simplified representation

The detailed simplified representations of seals are shown in tables 2 to 4.

NOTE — Seals shown in tables 2 to 4 are always depicted in the space above the axis.

Table 2 — Detailed simplified representation

No.	Detailed simplified representation	Application	
		Seals subject to rotation	Relevant International Standard
2.1		Rotary shaft lip type seals without dust lip Mechanical seals	ISO 6194-1
2.2		Rotary shaft lip type seals without dust lip Mechanical seals	ISO 6194-1

1) This type of illustration is not commonly used in technical drawings, but is used conventionally in catalogues, users' handbooks, prospectuses, etc.

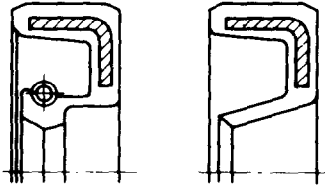
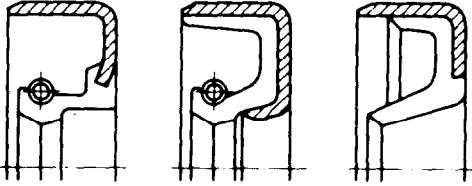
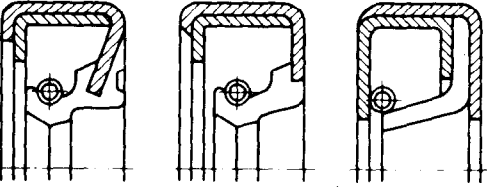
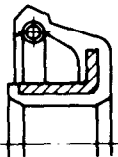
Application		Illustration ¹⁾
Seals subject to translation	Relevant International Standard	
Piston rod seals without wiper	ISO 5597	ISO 6194-1, type 1 – Rubber covered 
		ISO 6194-1, type 2 – Metal cased 
		ISO 6194-1, type 3 – Assembled 
Piston rod seals without wiper	ISO 5597	

Table 2 (concluded)

No.	Detailed simplified representation	Application	
		Seals subject to rotation	Relevant International Standard
2.3		Rotary shaft lip type seals with dust lip	ISO 6194-1
2.4		Rotary shaft lip type seals with dust lip	ISO 6194-1
2.5		Rotary shaft lip type seals without dust lip, double-acting Mechanical seals	—
2.6		Rotary shaft lip type seals without dust lip, double-acting Mechanical seals	—

1) This type of illustration is not commonly used in technical drawings, but is used conventionally in catalogues, users' handbooks, prospectuses, etc.

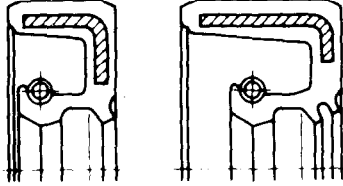
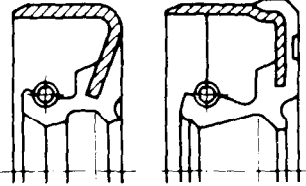
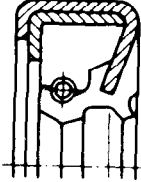
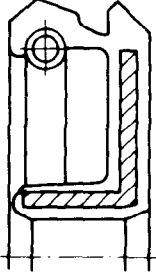
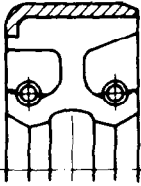
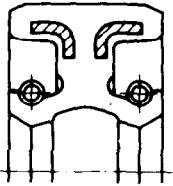
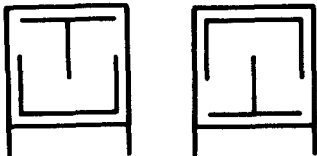
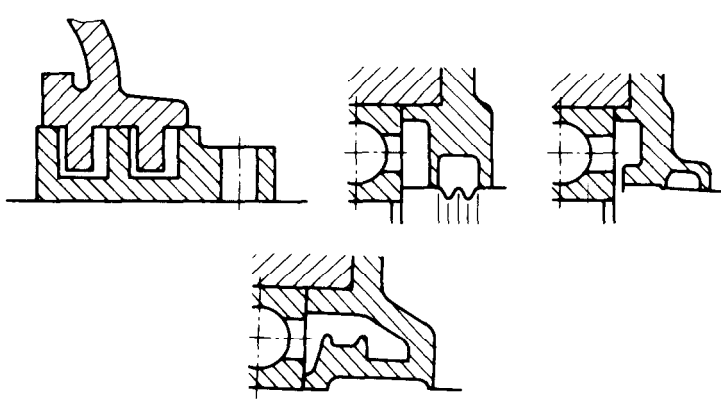
Application		Illustration 1)
Seals subject to translation	Relevant International Standard	
Piston rod seals with wiper	—	ISO 6194-1, type 4 – Rubber covered with minor lip  ISO 6194-1, type 5 – Metal cased with minor lip  ISO 6194-1, type 6 – Assembled with minor lip 
Piston rod seals with wiper	—	
Double-acting piston rod seals	—	Metal cased, double lip  Rubber covered, double lip 
Double-acting piston rod seals	ISO 6547	

Table 3 — Detailed representation of U-cups, packing sets and V-rings

No.	Detailed simplified representation	Application
3.1		
3.2		
3.3		
3.4		
3.5		
3.6		
3.7		

Table 4 — Detailed simplified representation of labyrinth seals (irrespective of the number of labyrinths)

No.	Detailed simplified representation	Application
4.1		

4 Examples

Examples showing the simplified representation of seals are given in figures 1 to 5.

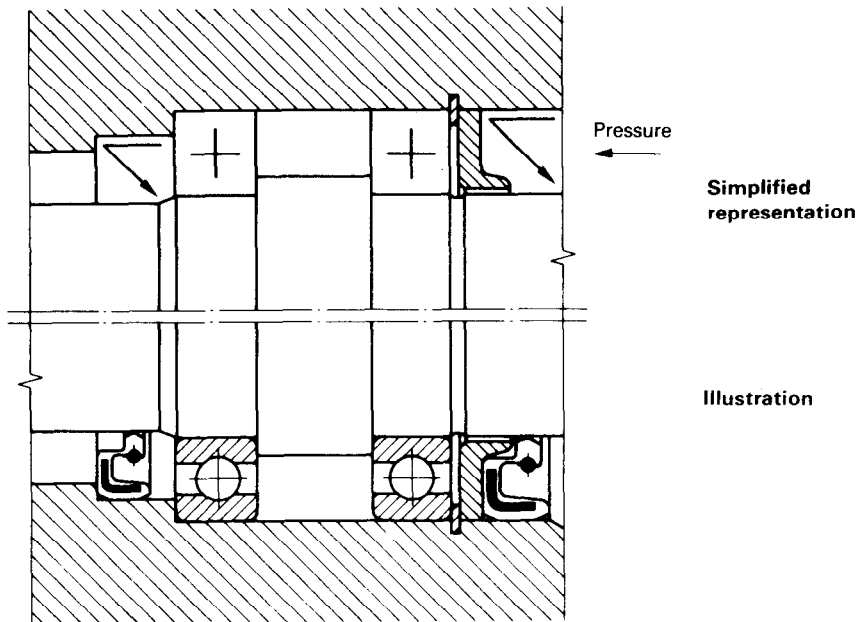


Figure 1 — Rotary shaft lip type seal (sealing against fluids)

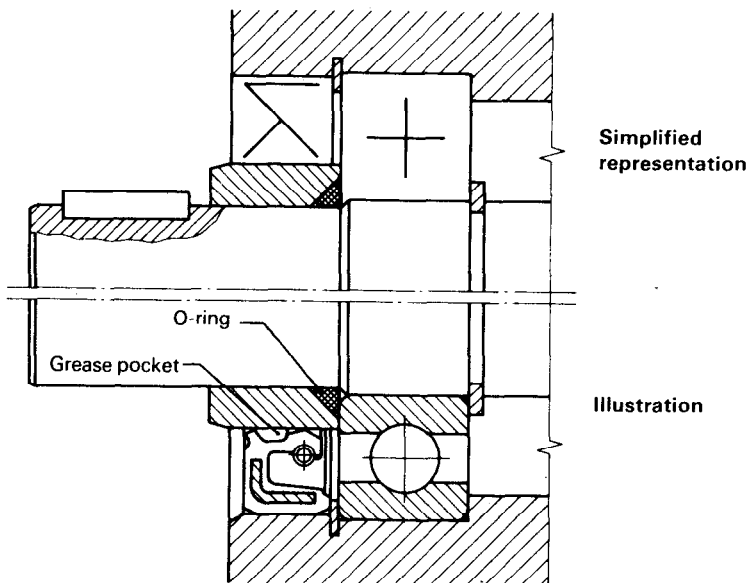


Figure 2 — Rotary shaft lip type seal with dust lip

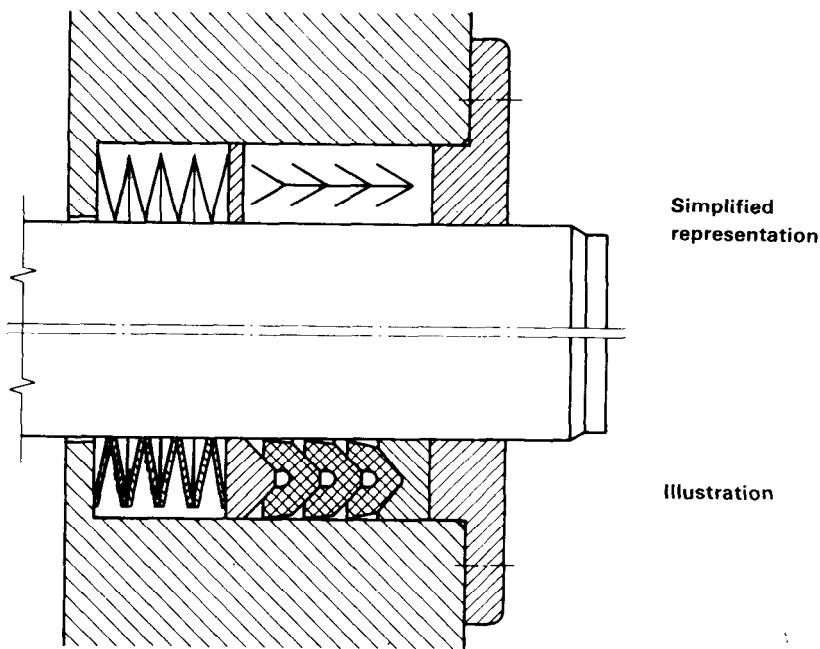


Figure 3 — Packing set

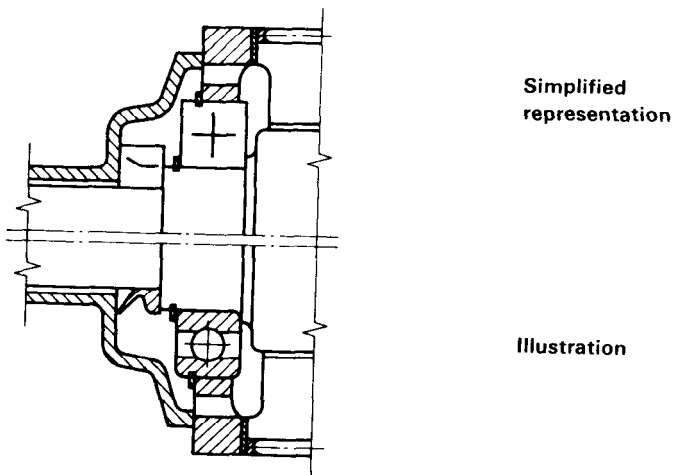


Figure 4 — V-ring

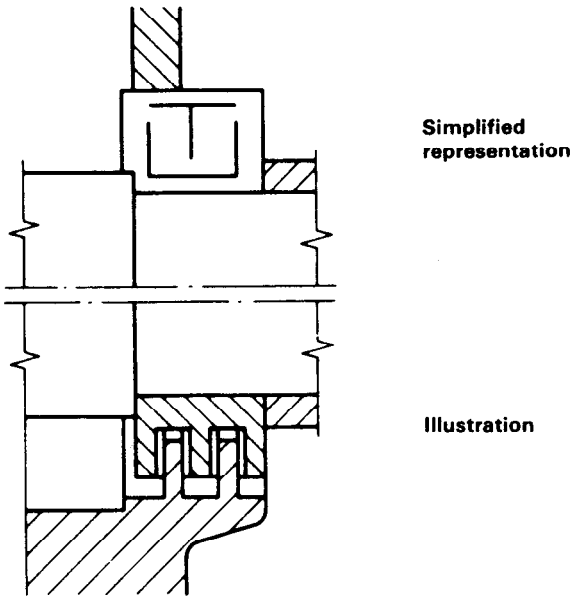


Figure 5 — Labyrinth seal

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