

Specification for

Rotary shaft lip type seals —

Part 1: Nominal dimensions and
tolerances

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Engineering Sector Board to Technical Committee MCE/11, upon which the following bodies were represented:

- British Compressed Air Society
- British Fluid Power Association
- British Hydromechanics Research Association
- British Industrial Truck Association
- British Rubber Manufacturers' Association Ltd.
- Ministry of Defence
- Society of British Aerospace Companies Ltd.
- Society of Motor Manufacturers and Traders Ltd.

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Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
0 Introduction	1
1 Scope and field of application	1
2 References	1
3 Definitions	1
4 Letter symbols	1
5 Nominal dimensions	1
6 Shafts	2
7 Housings	3
8 Seal tolerances	3
9 Size identification code	4
10 Identification statement	4
Annex A Seal specification	5
Figure 1 — Six basic types of seals	1
Figure 2 — Shaft lead-in chamfer	2
Figure 3 — Housing bore	3
Table 1 — Nominal dimensions	2
Table 2 — Shaft lead-in chamfer	2
Table 3 — Housing bore dimensions	3
Table 4 — Seal width tolerance	3
Table 5 — Seal outside diameter tolerances	4
Table 6 — Size identification code	4
Table 7 — Purchaser information	6
Table 8 — Manufacturer information	7
List of references	Inside back cover

National foreword

This Part of BS 7780 has been prepared under the direction of the Engineering Sector Board and is a revision of BS 1399 *Specification for rotary shaft lip seals*, Part 1:1970 *Dimensions of shafts and housings*, which is superseded and withdrawn. The standard is one of a series which specify rotary shaft lip type seals. It is the first Part of a new standard which represents a complete revision and renumbering of BS 1399. This Part is identical with ISO 6194-1:1982 *Rotary shaft lip type seals — Part 1: Nominal dimensions and tolerances*, published by the International Organization for Standardization (ISO).

Other Parts of the new standard are as follows:

- *Part 2: Vocabulary (implementing ISO 6194-2:1991);*
- *Part 3: Storage, handling and installation (implementing ISO 6194-3:1988);*
- *Part 4: Performance test procedures;*
- *Part 5: Identification of visual imperfections (implementing ISO 6194-5:1990).*

Cross-references

International standard	Corresponding British Standard
ISO 286-1:1988	BS EN 20286 <i>ISO system of limits and fits</i> Part 1: <i>Base of tolerances, deviations and fits</i> (Identical)
ISO 468:1982	BS 1134 <i>Assessment of surface texture</i> Part 1:1988 <i>Methods and instrumentation</i> (Technically equivalent)

The Technical Committee has reviewed the provisions of ISO 5598:1985, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

There are no corresponding British Standards for ISO 5598:1985.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

Lip type seals are used for retaining fluid or grease in equipment employing rotating shafts. In some instances the shaft is stationary and the housing rotates. Sealing of a lip type seal with low differential pressure is normally a result of a designed interference fit between the shaft and the flexible sealing element, which is usually fitted with a garter spring. An interference fit between the outside surface of the seal and the housing bore surface retains the seal in the housing and prevents leakage at the outer diameter.

1 Scope and field of application

1.1 This part of ISO 6194 lays down the nominal dimensions relating to rotary shaft lip type seals suitable for shafts from 6 to 400 mm diameter and accompanying housings from 16 to 440 mm. Seals of this type are not normally suitable for high pressure.

1.2 This part of ISO 6194 also includes dimensional limits for the shafts and housings to assure interchangeability of seals made by different seal manufacturers.

1.3 The recommended tolerances are also given for the principal seal dimensions.

1.4 The six basic types of seals covered by this International Standard are described and shown in .

1.5 The annex includes a recommended form for reaching agreement between purchaser and manufacturer.

2 References

ISO/R 286, *ISO System of limits and fits — Part 1: General, tolerances and deviations.*

ISO 468, *Surface roughness.*

ISO 5598, *Fluid power systems — Vocabulary*¹⁾.

3 Definitions

For definitions of terms used, see ISO 5598.

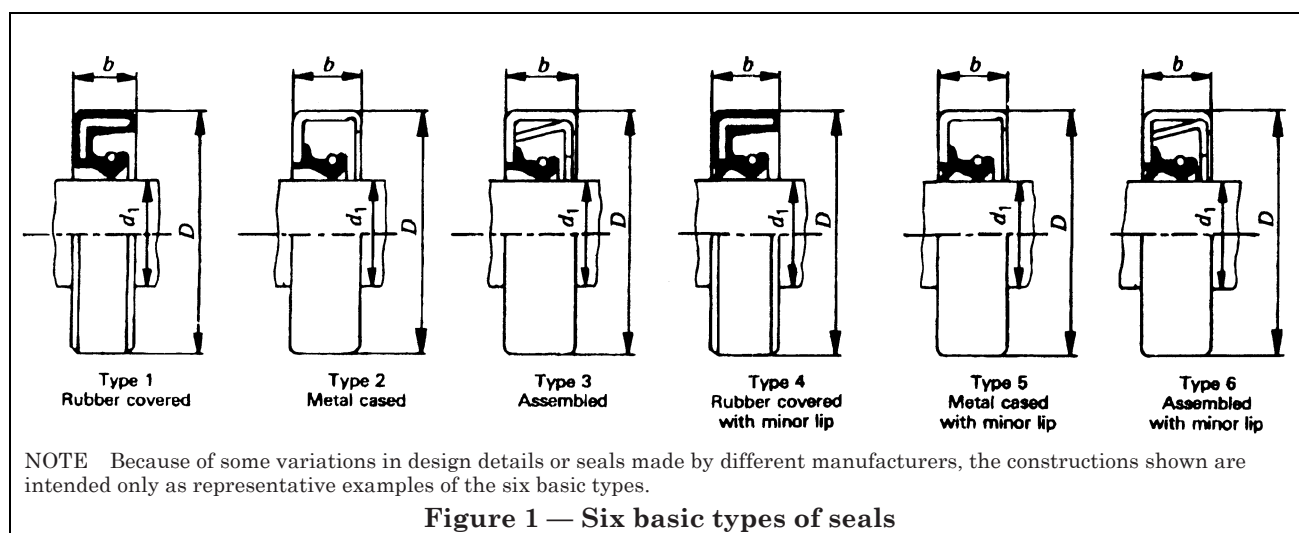
4 Letter symbols

Letter symbols used in this part of ISO 6194 are as follows:

- d_1 is the nominal diameter of the shaft to be used with the seal;
- d_2 is the minor diameter at shaft lead-in chamfer (see);
- D is the nominal diameter of the housing bore and of the outer diameter of the seal;
- b is the nominal width of the seal and is associated with the housing bore depth.

5 Nominal dimensions

The nominal dimensions of the seals are given in Table 1.



¹⁾ At present at the stage of draft.