

---

---

**Rotary-shaft lip-type seals incorporating  
elastomeric sealing elements —**

**Part 5:  
Identification of visual imperfections**

*Bagues d'étanchéité à lèvres pour arbres tournants incorporant des  
éléments d'étanchéité en élastomère —*

*Partie 5: Identification des imperfections visuelles*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

Foreword.....	iv
Introduction .....	v
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	1
4 Characteristic imperfections .....	1
4.1 Definition of sealing lip critical area .....	1
4.2 Type and name of imperfections.....	2
4.3 Typical sealing edge imperfections .....	2
4.4 Typical sealing lip imperfections (except sealing edge) .....	5
4.5 Typical spring imperfections .....	6
4.6 Typical outside diameter imperfections .....	6
4.7 Typical protection lip imperfections .....	7
5 Identification statement (reference to this part of ISO 6194) .....	8
Bibliography .....	9

## 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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6194-5 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This second edition cancels and replaces the first edition (ISO 6194-5:1990) which has been technically revised.

ISO 6194 consists of the following parts, under the general title *Rotary-shaft lip-type seals incorporating elastomeric sealing elements*:

- *Part 1: Nominal dimensions and tolerances*
- *Part 2: Vocabulary*
- *Part 3: Storage, handling and installation*
- *Part 4: Performance test procedures*
- *Part 5: Identification of visual imperfections*

## Introduction

Rotary-shaft lip-type seals are used to retain fluid, e.g. lubricant, in equipment where the differential pressure is relatively low. Typically, the shaft rotates and the housing is stationary, although in some applications the shaft is stationary and the housing rotates.

Dynamic sealing is normally the result of a designed interference fit between the shaft and a flexible element incorporated in the seal.

Similarly, a designed interference fit between the outside diameter of the seal and the diameter of the housing bore retains the seal and prevents static leakage.

Careful storage, handling, and proper installation of all seals are necessary to avoid hazards, both prior to and during installation, which can adversely affect service life.

This document is a preview generated by EVS

# Rotary-shaft lip-type seals incorporating elastomeric sealing elements —

## Part 5: Identification of visual imperfections

### 1 Scope

This part of ISO 6194 describes seals utilizing elastomeric sealing elements. They are normally considered suitable for use only at low pressures (see ISO 6194-1:2007, 6.1).

This part of ISO 6194 defines and classifies typical surface imperfections that can impair the function of the seals and is intended as a convenience for purchasers and manufacturers in their discussions concerning the importance of these imperfections in different applications.

NOTE ISO 6194 (all parts) is complementary to ISO 16589 (all parts), which covers seals incorporating thermoplastic sealing elements.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5598, *Fluid power system and components — Vocabulary*

ISO 6194-2, *Rotary-shaft lip-type seals incorporating elastomeric sealing elements — Part 2: Vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 and ISO 6194-2 apply.

### 4 Characteristic imperfections

#### 4.1 Definition of sealing lip critical area

See Figure 1 and Table 1.

Dimensions  $x$  and  $y$  were chosen because, in cases of wear, imperfections in this area can impair the function of the rotary-shaft lip-type seal during its lifetime.