INTERNATIONAL STANDARD

ISO 6621-2

Second edition
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Internal combustion engines — Piston rings —

Part 2: Inspection measuring principles

Moteurs à combustion interne — Segments de piston —

Partie 2: Principes de mesure pour inspection

Reference number
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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 6621-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

This second edition cancels and replaces the first edition (ISO 6621-2:1984), which has been technically revised.

ISO 6621 consists of the following parts, under the general title *Internal combustion engines — Piston rings*:

— *Part 1: Vocabulary*

— *Part 2: Inspection measuring principles*

— *Part 3: Material specifications*

— *Part 4: General specifications*

— *Part 5: Quality requirements*

Introduction

ISO 6621 is one of a series of International Standards dealing with piston rings for reciprocating internal combustion engines. Others are ISO 6622 [4], [5], ISO 6623 [6], ISO 6624 [7], [8], [9], [10], ISO 6625 [11], ISO 6626 [12], [13] and ISO 6627 [14].

The common features and dimensional tables presented in this part of ISO 6621 constitute a broad range of variables, and the designer selecting a particular ring type must bear in mind the conditions under which it will be required to operate. It is also essential that the designer refer to the specifications and requirements of ISO 6621-3 and ISO 6621-4 before completing a selection.

Internal combustion engines — Piston rings —

Part 2: Inspection measuring principles

1 Scope

This part of ISO 6621 specifies the principles to be used in the measuring for inspection purposes of piston rings for both reciprocating internal combustion engines and compressors working under analogous conditions. It is applicable to all such rings of a diameter $\leqslant$ 200 mm.

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 4287-1:1984, *Surface roughness — Terminology — Part 1: Surface and its parameters*

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 6507-3, *Metallic materials — Vickers hardness test — Part 3: Calibration of reference blocks*

ISO 6621-1, *Internal combustion engines — Piston rings — Part 1: Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6621-1 and in 4.2 apply.

4 Measuring principles

4.1 General measuring conditions

The following general conditions are applicable to all measuring principles, unless otherwise specified.

a) The ring shall rest on the reference plane in the free or open condition. No additional force shall be applied to load the ring on the reference plane, except when measuring *unevenness* in accordance with 4.2.19 or *helix* in accordance with 4.2.20.

b) Certain measurements are made with the ring in the closed condition in a gauge of nominal cylinder bore diameter. When orientated rings are measured in this way, they shall be so placed that the top side of the ring is towards the reference plane.

c) Measurements shall be made using instruments with a resolution not exceeding 10 % of the tolerance of the dimension being measured.