
**Internal combustion engines —
Piston rings —**

**Part 5:
Quality requirements**

*Moteurs à combustion interne — Segments de piston —
Partie 5: Exigences de qualité*



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 22, *Road vehicles*.

This third edition cancels and replaces the second edition (ISO 6621-5:2005), of which it constitutes a minor revision.

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

This International Standard is one of a number of series of International Standards dealing with piston rings for reciprocating internal combustion engines. Others are ISO 6622, ISO 6623, ISO 6624, ISO 6625, ISO 6626, and ISO 6627.

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

The difficulty of trying to define in absolute terms the quality attainable in normal commercial manufacture of piston rings is well known. In this part of ISO 6621, the commonly encountered aspects of quality in terms of casting defects and other departures from ideal are quantified. Many minor defects are clearly quite acceptable; other defects because of size or number are inadmissible.

Internal combustion engines — Piston rings —

Part 5: Quality requirements

1 Scope

This part of ISO 6621 specifies those quality aspects that are capable of definition but not normally found on a drawing specification.

It is applicable to the following:

- single-piece piston rings of grey cast iron or steel;
- multi-piece piston rings (oil control rings) consisting of cast iron parts and spring components;
- single-piece and multi-piece oil control rings of steel, i.e. oil control rings in the form of strip steel components or steel segments (rails) with spring expander components.

In addition to specifying certain of the limits of acceptance relating to inspection measuring principles (covered by ISO 6621-2), this part of ISO 6621 also covers those features for which no recognized quantitative measurement procedures exist and which are only checked visually with normal eyesight (spectacles if worn normally) and without magnification. Such features (superficial defects) are additional to the standard tolerances of ring width, radial wall thickness, and closed gap.

This part of ISO 6621 does not establish acceptable quality levels (AQL), it being left to manufacturer and client to decide the appropriate levels jointly. In this case, the recommendations of ISO 2859 are followed.

This part of ISO 6621 specifies the quality requirements of piston rings for reciprocating internal combustion engines for road vehicles and other applications. It is applicable to all such rings of a nominal diameter from 30 mm up to and including 200 mm.

2 Normative references

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

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

ISO 6621-3, *Internal combustion engines — Piston rings — Part 3: Material specifications*

ISO 6622 (all parts), *Internal combustion engines — Piston rings*

ISO 6623, *Internal combustion engines — Piston rings — Scraper rings made of cast iron*

ISO 6624 (all parts), *Internal combustion engines — Piston rings*

ISO 6625, *Internal combustion engines — Piston rings — Oil control rings*

ISO 6626, *Internal combustion engines — Piston rings — Coil-spring-loaded oil control rings*

ISO 6626-2, *Internal combustion engines — Piston rings — Part 2: Coil-spring-loaded oil control rings of narrow width made of cast iron*