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Internal combustion engines — Piston rings — Expander/rail oil-control rings

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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 (see 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 (see 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.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 34, *Propulsion, powertrain and powertrain fluids*.

This third edition cancels and replaces the second edition (ISO 6627:2011), which has been technically revised.

The main changes are as follows:

— previous nomenclature referred to the rails as segments;

— barrel faced rail was added;

— PVD specification for rails was added;

— figures and tables were revised;

— new dimension introduced for expander;

— applicable bore diameter range increased to 140mm.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is one of a series of International Standards dealing with piston rings for reciprocating internal combustion engines. Others are the ISO 6621 series, the ISO 6622 series, ISO 6623, the ISO 6624 series, ISO 6625 and the ISO 6626 series (see Clause 2 and the Bibliography).

The common features and dimensional tables included in this document represent a broad range of variables. In selecting a ring type, the designer will above all need to consider the particular operating conditions. Moreover, it is essential that the designer refers to the specifications and requirements of ISO 6621-3 and ISO 6621-4 before completing the selection.

Internal combustion engines — Piston rings — Expander/rail oil-control rings

1 Scope

This document specifies the essential dimensional features of expander/rail oil-control rings, without providing a complete product description (because expander-rail designs vary from piston-ring manufacturer to piston-ring manufacturer, the interaction between the manufacturer and the client will determine specific design details).

This document applies to expander/rail oil-control rings of nominal diameters ranging from 40 mm to 140 mm for reciprocating internal combustion engines for road vehicles and other applications. It also applies to piston rings for compressors working under analogous conditions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6621-1, *Internal combustion engines — Piston rings — Part 1: Vocabulary*

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

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Symbols and abbreviated terms

For the purposes of this document, the symbols and abbreviated terms in Table 1 apply.