



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 1149.4-2021

**Internal combustion engines - Piston rings - Part 4: Quality
requirements**

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Surface defects	2
4.1 General	2
4.2 Porosity, stomata and blisters	2
4.3 Scratches, indentations, pits and cracks	2
4.4 Edge	3
4.5 Other items inspected only with the naked eye	9
5 Material	10
5.1 Material specifications	10
5.2 The effect of temperature on the disappearance of tangential elasticity	10
6 The height of the protruding surface of the piston ring mark	10
7 Machining of outer circular surface and side surface-deviation from ideal contour and plane of non-design requirements	11
7.1 General	11
7.2 Permissible deviation of the outer circular surface profile	11
7.3 Allowable value of warpage	12
Reference	13

Foreword

GB/T 1149 "Piston Rings for Internal Combustion Engines" is divided into sixteen parts.

---Part 1.General rules;

---Part 2.Terminology;

---Part 3.Material specifications;

---Part 4.Quality requirements;

---Part 5.Inspection methods;

---Part 6.Cast iron scraper;

---Part 7.Rectangular cast iron ring;

---Part 8.Rectangular steel ring;

- Part 9.Trapezoidal cast iron ring;
- Part 10.Trapezoidal steel ring;
- Part 11.Wedge-shaped cast iron ring;
- Part 12.Wedge-shaped steel ring;
- Part 13.Oil ring;
- Part 14.Spiral spring oil ring;
- Part 15.Thin cast iron spiral spring oil ring;
- Part 16.Steel belt combination oil ring.

This part is Part 4 of GB/T 1149.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 1149.4-2008 "Piston Rings for Internal Combustion Engines Part 4.Quality Requirements", and GB/T 1149.4-2008

In comparison, with the exception of editorial changes, the main technical changes are as follows.

- Modified the scope of application and added a steel spiral spring oil ring (see Chapter 1, Chapter 1 of the.2008 edition);
- The normative reference document ISO 6626-3 "Piston Rings for Internal Combustion Engines Part 3.Steel Coil Spring Oil Rings" has been added (see Section 2 chapter);
- The requirements for the chrome-plated chrome-plated outer surface are modified (see 4.5.4, 4.5.4 of the.2008 edition);
- Added the requirements of the radial offset tolerance of the oil scraper edge of the SF type spiral spring oil ring specified in ISO 6626-3 (see 7.2.5);
- Standardize the expression in the chart (see the full text chart).

The translation method used in this section is equivalent to ISO 6621-5.2013 "Piston Rings for Internal Combustion Engines Part 5.Quality Requirements".

The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows.

- GB/T 1149.1-2008 Internal Combustion Engine Piston Ring Part 1.General Rules (ISO 6621-4.2003, IDT)
- GB/T 1149.2-2010 Internal combustion engine piston ring Part 2.Terminology (ISO 6621-1.2007, IDT)

---GB/T 1149.3-2010 Internal combustion engine piston ring Part 3.Material specification (ISO 6621-3.2000, IDT)

---GB/T 1149.6-2008 internal combustion engine piston ring part 6.cast iron scraper ring (ISO 6623.2004, IDT)

---GB/T 1149.7-2010 Internal combustion engine piston ring Part 7.Rectangular cast iron ring (ISO 6622-1.2003, IDT)

---GB/T 1149.8-2008 Internal Combustion Engine Piston Ring Part 8.Rectangular Steel Ring (ISO 6622-2.2003, IDT)

---GB/T 1149.9-2008 Internal combustion engine piston ring Part 9.Trapezoidal cast iron ring (ISO 6624-1.2001, IDT)

---GB/T 1149.10-2013 Internal combustion engine piston ring Part 10.Trapezoidal steel ring (ISO 6624-3.2001, IDT)

---GB/T 1149.11-2010 Piston rings for internal combustion engines Part 11.Wedge-shaped cast iron rings (ISO 6624-2.2003, IDT)

---GB/T 1149.12-2013 Piston rings for internal combustion engines Part 12.Wedge-shaped steel rings (ISO 6624-4.2003, IDT)

---GB/T 1149.13-2008 Internal Combustion Engine Piston Ring Part 13.Oil Ring (ISO 6625.1986, IDT)

---GB/T 1149.14-2008 internal combustion engine piston ring part 14.spiral spring oil ring (ISO 6626.1989, IDT)

---GB/T 1149.15-2017 Piston rings for internal combustion engines Part 15.Thin cast iron spiral spring oil rings (ISO 6626-2.

2013, IDT)

---GB/T 1149.16-2015 Piston ring for internal combustion engine Part 16.Steel belt combined oil ring (ISO 6627.2011, IDT)

This section has made the following editorial changes.

---Modified the part number in the standard name.

This part was proposed by China Machinery Industry Federation.

This part is under the jurisdiction of the National Internal Combustion Engine Standardization Technical Committee (SAC/TC177).

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1 Scope

This part of GB/T 1149 specifies product quality requirements that are not usually expressed in technical requirements on drawings.

This section applies to the following piston rings.

- Integral cast iron ring or steel compression ring;
- Combined piston ring (oil ring), composed of cast iron parts and spring parts;
- Single type and combined steel oil ring, namely steel spiral spring oil ring and steel belt combined oil ring.

This part supplements the limits of some quality characteristics stipulated in the inspection method standard (ISO 6621-2), and also stipulates those that have not been

The quality characteristics of recognized quantitative inspection methods, such as surface defects, require normal vision (or wearing corrective glasses) to be inspected without

With the help of any magnifying device. These quality characteristics specified in this part are for the various types of piston ring rings specified in other parts of GB/T 1149.

Complement of quality characteristics such as height, radial thickness and closed gap tolerance.

This section does not specify the acceptable quality level value (AQL), which shall be agreed upon by both parties in accordance with ISO 2859 when necessary.

This part specifies the quality requirements for reciprocating internal combustion engine piston rings used for road vehicles and other purposes, and applies to cylinder diameters ranging from

Piston rings of 30mm~200mm.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

ISO 6621-1 Piston rings for internal combustion engines Part 1.Terminology
(Internalcombustionengines-Pistonrings-Part