International Standard 6621/1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Internal combustion engines — Piston rings — Part 1: Vocabulary

Moteurs à combustion interne — Segments de piston — Partie 1: Vocabulaire

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6621/1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Internal combustion engines — Piston rings — Part 1: Vocabulary

0 Introduction

ISO 6621 is one of a series of International Standards dealing with piston rings for reciprocating internal combustion engines:

ISO 6621, *Internal combustion engines — Piston rings —*

Part 1: Vocabulary.

Part 2: Measuring principles.

Part 3: Material specifications.

Part 4: General specifications. [1]

Part 5: Quality requirements. [1]

ISO 6622, *Internal combustion engines — Piston rings —*

Part 1: Rectangular rings.

Part 2: Rectangular rings with narrow ring width. [2]

ISO 6623, *Internal combustion engines — Piston rings — Scraper rings.*

ISO 6624, *Internal combustion engines — Piston rings —*

Part 1: Keystone rings.

Part 2: Half keystone rings. [3]

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

ISO 6626, *Internal combustion engines — Coil spring loaded oil control rings.* [1]

1 Scope

This part of ISO 6621 defines the most commonly used terms for piston rings. These terms designate either types of piston rings or certain characteristics and phenomena of piston rings.

NOTES

1 Further terms and definitions covering measuring principles are given in ISO 6621/2.

2 In addition to terms given in the three official ISO languages (English, French and Russian), this part of ISO 6621 gives the equivalent terms in German, Spanish, Portuguese and Italian; these have been included at the request of Technical Committee ISO/TC 22 and are published under the responsibility of the member bodies for Germany, F.R. (DIN), Spain (IRANOR), Portugal (DGQ) and Italy (UNI). However, only the terms given in the official languages can be considered as ISO terms.

2 Field of application

The terms and definitions in this part of ISO 6621 apply to piston rings for reciprocating internal combustion engines.

The terms and definitions in this part of ISO 6621 may be used for piston rings of compressors working under analogous conditions.

3 Reference

ISO 286, *ISO system of limits and fits.* [4]

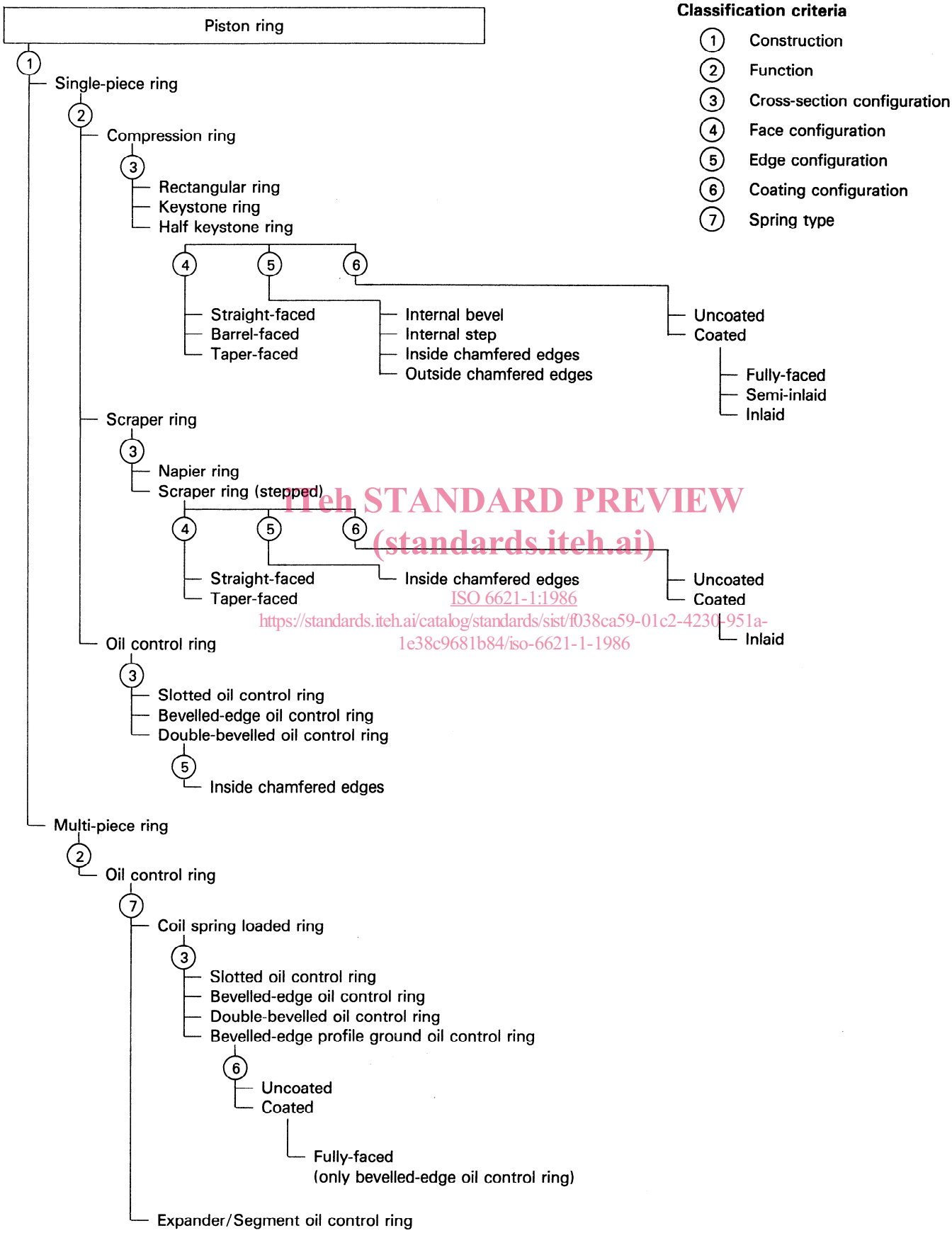
1) At present at the stage of draft.

2) At present at the stage of draft (will be published as a Technical Report).

3) In preparation (will be published as a Technical Report).

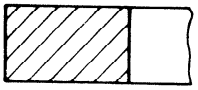
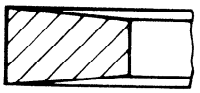
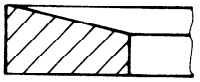
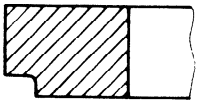
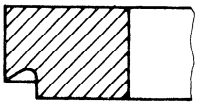
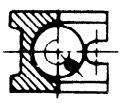
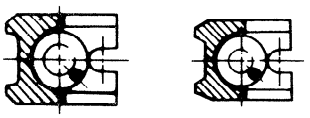
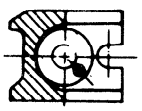
4) At present at the stage of draft. (Revision of ISO/R 286-1962.)

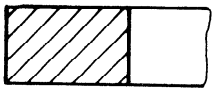
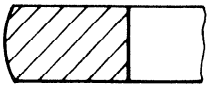
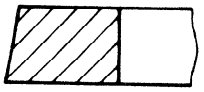
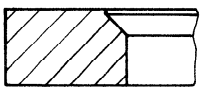
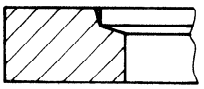
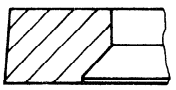
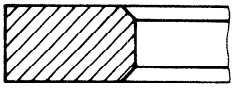
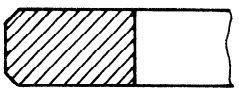
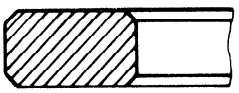
4 Piston ring classification

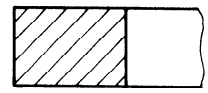
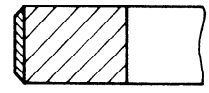
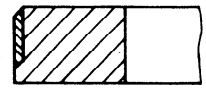
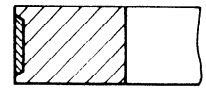
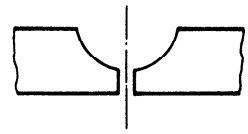
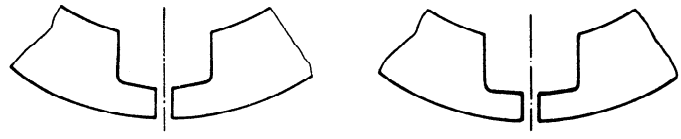


5 Piston ring types

NOTE — Everyday combinations of configurations listed in 5.2, 5.3, 5.4 and 5.5 with rings according to 5.1 are shown as "common features" in the appropriate dimensional standards, ISO 6622, ISO 6623, ISO 6624, ISO 6625 and ISO 6626.

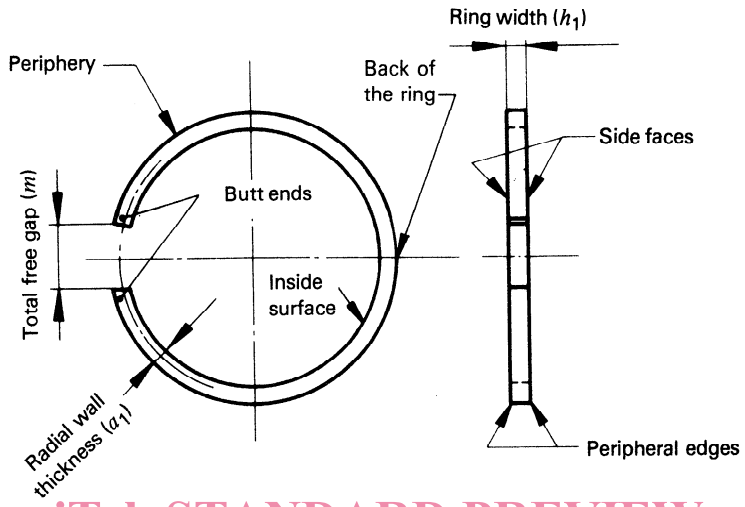
5.1 Cross-section configuration	
Rectangular ring	
Keystone ring	
Half keystone ring	
Scraper ring (stepped)	
Napier ring (undercut step)	
Slotted oil control ring	
Bevelled-edge oil control ring	
Double-bevelled oil control ring	
Coil spring loaded slotted oil control ring	
Coil spring loaded bevelled-edge oil control ring	
Coil spring loaded double-bevelled oil control ring	
Expander/Segment oil control ring	

5.2 Face configuration	
Straight-faced	
Barrel-faced	
Taper-faced	
5.3 Edge configuration	
Internal bevel top (positive twist type)	
Internal step top (positive twist type)	
Internal bevel bottom (negative twist type)	
Internal step bottom (negative twist type)	
Inside edges chamfered	
Outside edges chamfered	
Inside and outside edges chamfered	

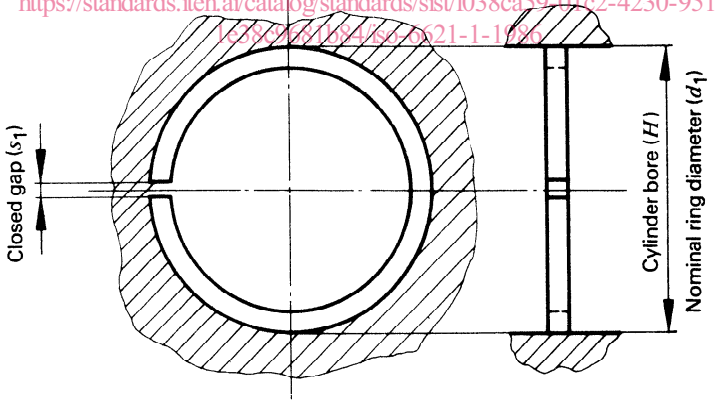
5.4 Coating configuration	
Uncoated	
Coated	
— Fully-faced	
— Semi-inlaid	
— Inlaid	
5.5 Joint configuration	
Joint with side notch	
Joint with internal notch	

6 Piston ring nomenclature

6.1 Free (unstressed) ring

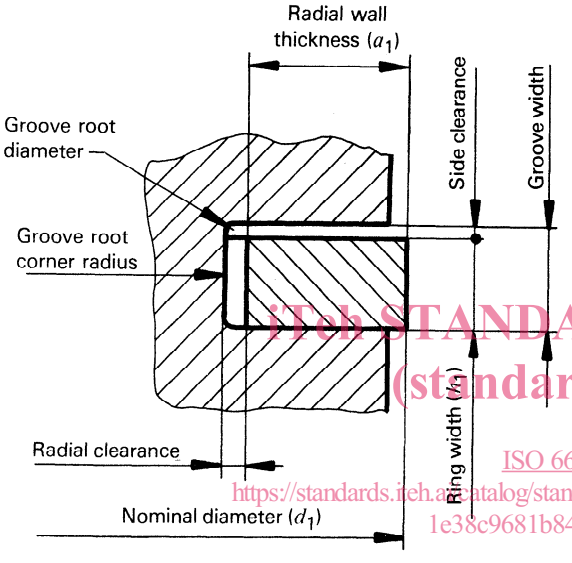


6.2 Closed ring

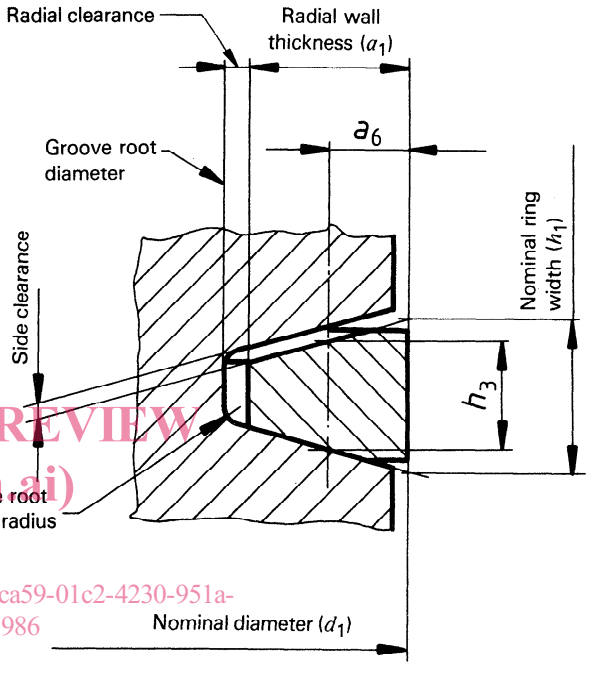


6.3 Ring clearances

a) **Rectangular ring**



b) **Keystone ring**



Method A : a_6 ref., h_3 measured
Method B : h_3 ref., a_6 measured