ISO 18669-1:2021 (E)

Internal combustion engines — Piston pins — Part 1: General specifications

Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

3.1 General
3.2 Geometrical and manufacturing features of piston pins
3.2.1 Bore types
3.2.2 Outside-edge configurations
3.2.3 Other features

4 Symbols

5 Nomenclature

5.1 Outside, inside and end features
5.2 Outside edge and inside chamfer configurations
5.2.1 Chamfered outside-edge configuration
5.2.2 Double-chamfered outside-edge configuration
5.2.3 Radiused outside-edge configuration
5.2.4 Chamfer-locking outside-edge configuration
5.3 Outside-edge drop-off configuration

6 Codes

7 Designation of piston pins

7.1 Designation elements and order
7.1.1 Mandatory elements
7.1.2 Additional elements
7.2 Designation examples

8 Piston pin types, dimensions and tolerances

8.1 Manufacturing types
8.2 Dimensions and tolerances
8.2.1 Outside diameter and form and location tolerances
8.2.2 Inside diameter tolerance
8.2.3 Length (l1) and gauge length (l5) tolerances
8.2.4 Outside-edge form
8.2.5 Inside-edge profile
8.2.6 Tapered bore dimensions
8.2.7 Centre-web dimensions (see Figure 17)
8.2.7.1 Centre-web length (l4)
8.2.7.2 Centre-web diameter (d4)

9 Material and heat treatment

9.1 Type of material
9.2 Core hardness I core strength
9.3 Carburised and nitrided case depth
9.4 Surface hardness
9.5 Volume change

10 Common features

10.1 Roughness of surfaces

10.1.1 Roughness of machined surfaces
10.1.2 Roughness of coated surfaces
10.1.3 Roughness of extruded and seamless drawn bore surfaces
10.2 Marking of piston pins
10.3 Miscellaneous
10.3.1 Cleanliness
10.3.2 Corrosion protection
10.3.3 Residual magnetism
10.3.4 Packaging

11 Quality requirements

11.1 Material characteristics
11.1.1 Decarburisation
11.1.2 Cementite network
11.1.3 Nitride coating
11.1.4 Grinder burn
11.2 Material defects
11.2.1 Cracks
11.2.2 Forming streaks
11.2.2.1 Circumferential
11.2.2.2 Axial
11.3 Visual defects

Page count: 26