



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

GB/T 97.1-2002

Plain washers -- Product grade A
(English Translation)

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Foreword

This Standard equivalently adopts the international standard ISO 7089.2000

"Plain washers - Normal series - Product grade A".

This Standard is part of the series of national standards for "Plain washers" product. The series includes.

- a) GB/T 95-2002 Plain washers - Product grade C;
- b) GB/T 96.1-2002 Large series - Product grade A;
- c) GB/T 96.2-2002 Large series - Product grade C;
- d) GB/T 97.1-2002 Plain washers - Product grade A;
- e) GB/T 97.2-2002 Plain Washers - Chamfered-Product Grade A;
- f) GB/T 97.3-2000 Plain washers for clevis pins;
- g) GB/T 97.4-2002 Plain washers for screw and washer assemblies;
- h) GB/T 97.5-2002 Plain washers for tapping screw and washer assemblies;
- i) GB/T 848-2002 Plain washers - Small series - Product grade A;
- j) GB/T 5287-2002 Plain washers - Extra large series - Product grade C.

ISO 7089 does not specify packaging technical requirements, which are specified in this Standard (Table 3).

ISO 7089 does not specify a simplified designation. This Standard, according to the principle of simplification of GB/T 1237, gives simplified designation

examples (5.2).

This Standard is a revised edition of GB/T 97.1-1985. The main changes are as follows.

- a) ADD the scope of application for washers of classes 200 HV and 300 HV (Clause 1);
- b) According to the preferred degree of thread size (thread diameter), dimensions are classified into. Table 1 -- Preferred dimensions; Table 2 -- Non-preferred dimensions (Table 1 and Table 2);
- c) ADD nominal sizes. 18, 22, 27, 33, 39, 42, 45, 48, 52, 56, 60, and 64 mm (Table 1 and Table 2);
- d) GIVE the hardness range and test method corresponding to the hardness class (Table 3);
- e) ADD non-electrolytically applied zinc flake coatings (Table 3).

This Standard, from the date of implementation, replaces GB/T 97.1-1985.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee

85 on Fasteners of Standardization Administration of China.

This Standard was drafted by China Academy of Machinery Science and Technology.

This Standard is interpreted by the Secretariat of National Technical Committee

85 on Fasteners of Standardization Administration of China.

ISO 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 7089 was prepared by Technical Committee ISO/TC 2, Fasteners.

This second edition cancels and replaces the first edition (ISO 7089:1983), which has been technically revised.

Plain washers - Product grade A

1 Scope

This Standard specifies normal-series, product-grade-A plain washers in the

200 HV and 300 HV hardness classes and of nominal sizes (nominal thread

diameters) ranging from 1.6 mm to 64 mm inclusive.

Washers of hardness class 200 HV are suitable for

- hexagon bolts and screws of product grades A and B in property classes up to and including 8.8;
- hexagon nuts of product grades A and B in property classes up to and including 8;
- hexagon bolts, screws and nuts of stainless steel and of similar chemical

composition;

- case-hardened thread rolling screws.

Washers of hardness class 300 HV are suitable for

- hexagon bolts and screws of product grades A and B in property classes up to and including 10.9;

- hexagon nuts of product grades A and B in property classes up to and including 10.

If dimensions other than those listed in this Standard are required, they should be selected from those given in GB/T 5286.

When soft material pieces are clamped, or large clearance holes in the workpiece are used, the user should check the suitability of this type of washer.

2 Reference standards

The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. At the time of publication of this Standard, the editions shown are valid. All standards will be revised. Parties who use this Standard shall investigate the possibility of applying the most recent editions of the standards indicated below.

GB/T 90.1-2002 Fasteners - Acceptance inspection (idt ISO 3269.2000)

GB/T 90.2-2002 Fasteners - Marking and packaging

GB/T 1237-2000 Designation system for fasteners (eqv ISO 8991.1986)

GB/T 3098.6-2000 Mechanical properties of corrosion-resistant stainless-steel fasteners - Part 1. Bolts, screws and studs (idt ISO 3506-1.1997)

GB/T 3103.3-2000 Tolerances for fasteners - Plain washers (idt ISO 4759-3.2000)

4 Specifications and standards of reference

Outside diameter d2 Thickness