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

GB/T 893.1-1986

**Retaining rings for bores
(English Translation)**

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Foreword

This standard is one of the "elastic ring" series of standards, the series includes.

- GB/T 893 hole with a flexible ring;
- GB/T 894 shaft with a flexible ring;
- GB/T 896 opening ring;
- GB/T 959.1 retaining ring technical conditions elastic ring.

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 893.1-1986 "hole with a ring type A" and GB/T 893.2-1986 "hole with a flexible ring B Type ", compared with GB/T 893.1-1986, GB/T 893.2-1986, the main technical changes are as follows.

- merge GB/T 893.1-1986 and GB/T 893.2-1986 as a standard and modify the standard name;
- increase standard (type A) specifications. $d_1 = 210, 220, 230, 240, 250, 260, 270, 280, 290$ and 300mm (see Table 1);
- modify the standard (A type) thickness (s) and other dimensions and tolerances (see Table 1);
- specify the installation of the clamp hole (d_5) for the minimum limit size (see Table 1, Table 2);
- increase the carrying capacity of the groove FN standard value (see Table 1, Table 2, Chapter 5);
- increase the carrying capacity of the retaining ring FR standard value (see Table 1, Table 2, Chapter 5);
- increase the installation tool standards and specifications (see Table 1, Table 2);

--- increase the heavy (B type) its $d_1 = 20\text{mm} \sim 100\text{mm}$ (see Table 2);

- increase groove design and installation (see Chapter 6, Chapter 7);

--- delete the original Appendix A.

This standard is proposed by the China Machinery Industry Federation.

This standard is nationalized by the National Standardization Technical Committee on Fasteners (SAC/TC85).

This standard is responsible for the drafting unit. China Machine Productivity Promotion Center.

This standard participates in the drafting unit. Anhui Ningguo Dongpo Fastener Co., Ltd., Shanghai Ball Ming Standard Parts Co., Ltd., Hangzhou forward tooth Wheel box group co., Ltd.

This standard is interpreted by the National Standardization Technical Committee for Fasteners.

This standard replaced the previous version of the standard release.

--- GB/T 893-1976;

--- GB/T 893.1-1986;

--- GB/T 893.2-1986.

Hole with a flexible ring

1 Scope

This standard specifies the standard type (type A) of the aperture $d_1 = 8\text{mm} \sim 300\text{mm}$ and the heavy type (type B) of $d_1 = 20\text{mm} \sim 100\text{mm}$.

Hole with a ring, given the design of the groove design data.

This standard applies to the use of fixed parts or parts in the hole (such as rolling bearings) with an axial force can withstand the ring.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 959.1 retaining ring technical conditions elastic retaining ring GB/T 1237 Fastener marking method JB/T 3411.48 Elastic pliers with holes

3 Code

The following codes apply to this document.

a radial width of the ear b The radial width of the opening of the ring d1 aperture d2 groove diameter d3 free state retaining ring outer diameter d4 The minimum bore diameter on the centerline is calculated as. $d4 = d1 - 2.1a$ d5 Mounting hole diameter FN material under the yield strength $ReL = 200MPa$ groove bearing capacity (see 5.2) FR Right-angled contact ring carrying capacity (see 5.3) FRg Champened contact bearing capacity (see 5.3) g parts chamfer size (see Figure 2) m groove width (see Table 1, Table 2) n margin (see Table 1, Table 2) the yield strength of ReL material s ring thickness (see Table 1, Table 2) t d1 and d2 are nominal dimensions (see Figure 2)

4 Size and design data

The retaining ring and its groove dimensions shall be specified in Table 1 and Table 2. Among them, the dimensional tolerances apply to the size before plating.

Figure 1 is an example only.

Groove and groove edge load values are determined by specifications. The bottom of the groove shall be specified in accordance with 6.3.