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

GB/T 3452.4-2020

**O-rings for fluid power systems - Part 4: Anti-extrusion
rings(back-up rings)**

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Foreword

GB/T 3452 "O-shaped rubber sealing ring for hydraulic and pneumatic" is divided into 5

parts.

---Part 1.Dimension series and tolerances;

---Part 2.Appearance quality inspection specifications;

---Part 3.Groove dimensions;

---Part 4.Anti-extrusion ring (retaining ring);

---Part 5.Specification for elastomer materials.

This part is Part 4 of GB/T 3452.

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

This part uses the redrafting method to modify and adopt ISO 3601-4.2008 "Hydraulic Transmission System O-Ring Part 4.Anti-extrusion Ring

(Retaining Ring)".

The technical differences between this part and ISO 3601-4.2008 and the reasons are as follows.

---Regarding normative reference documents, this section has made adjustments with technical differences to adapt to my country's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows.

* Replace ISO 3601-2 with GB/T 3452.3-2005 modified to adopt international standards;

* Replace ISO 5598 with GB/T 17446 which is equivalent to the international standard.

--- Added a "Type" chapter (see Chapter 4).

---Deleted 9.1.2.2, 9.1.2.3, 9.1.2.4 in ISO 3601-4.2008, and merged and simplified its content into Table 3.

---The cross-sectional diameter of the applicable O-ring is changed from 1.78mm, 2.62mm, 3.53mm, 5.33mm, 6.99mm to conform

GB/T 3452.1 1.8mm, 2.65mm, 3.55mm, 5.30mm, 7.00mm (see Table 1, Table 2 and Table 3) to suit

The technical conditions of our country.

---The outer diameter d15 or d17 of the O-ring retaining ring for the piston uses the cylinder inner diameter d4 given in GB/T 3452.3-2005 instead

ISO 3601-2.2008 Table 2 and Table 3 give d4 (see 9.3.1) to meet the technical conditions of our country.

---The inner diameter d14 or d16 of the O-ring retaining ring for the piston rod uses the piston rod diameter d5 given in GB/T 3452.3-2005,

Replace the d5 (see 9.4.1) given in Table 4 and Table 5 of ISO 3601-2:2008 to adapt to the technical conditions of our country.

Compared with ISO 3601-4:2008, this part has many structural adjustments. Appendix A lists this part and ISO 3601-4.

The 2008 chapter number change comparison list.

This part was proposed by China Machinery Industry Federation.

This part is under the jurisdiction of the National Hydraulic and Pneumatic Standardization Technical Committee (SAC/TC3).

Drafting organizations of this section. Northwest Research and Design Institute of Rubber and Plastics Co., Ltd., Guangzhou Machinery Research Institute Co., Ltd., Hefei Jiyuan Sui Italian Hydraulic Technology Co., Ltd., Chengdu Shengbang Seal Co., Ltd., Guangdong Tiancheng Seal Co., Ltd., Nanjing Lead East

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1 Scope

This part of GB/T 3452 specifies the terms and definitions, types, types,

Symbols, structure type, installation location, materials, dimensions and tolerances and identification.

This section applies to the anti-extrusion ring of the O-ring specified in GB/T 3452.1, and the groove application specified in GB/T 3452.3-2005

The anti-extrusion ring of the plug and piston rod dynamic sealing O-ring, and the anti-extrusion ring of the radial static sealing O-ring (hereinafter referred to as the retaining ring).

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 document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 3452.3-2005 O-shaped rubber sealing ring groove size for hydraulic and pneumatic

(ISO 3601-2.1999, MOD)

GB/T 17446 Vocabulary of fluid transmission systems and components (GB/T 17446-2012, ISO 5598.2008, IDT)

3 Terms and definitions

The terms and definitions defined in GB/T 17446 apply to this document.

4 types

This section specifies the following 5 types of retaining rings.

T1---Spiral retaining ring;

T2---Rectangular notch type retaining ring;

T3---rectangular integral type retaining ring;

T4---Concave notch type retaining ring;

T5---Concave integral retaining ring.

5 symbols

The following letter symbols are used in this section.

b1---The groove width without retaining ring;

b2---The groove width with a retaining ring;

b3---The groove width with two retaining rings;

b5---The axial width of the T2 and T3 retaining rings, the axial width of the non-concave part of the T4 and T5 retaining rings;

b6---The axial width of the T1 type retaining ring;

b7---The total axial width of T4 and T5 retaining rings;

d2---The cross-sectional diameter of the O-ring;