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

GB 29334-2012

**Elastomeric cups and seals for cylinders for hydraulic braking
systems using a non-petroleum base hydraulic brake fluid**

用于非石油基液压制动液的汽车液压制动缸用的弹性体皮碗和密封圈

(English Translation)

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Foreword

Chapter 5 of this standard is mandatory, the rest are recommended.

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

This draft standard method using the reformed modified using ISO 4928:2006 "Road vehicles for non-petroleum base hydraulic braking hydraulic brake fluid an elastomeric cup seal member and the cylinder actuator system (maximum operating temperature of 120 °C) "and ISO 6118:2006" Road vehicles for non-petroleum an elastomeric cup seal member and the cylinder base hydraulic brake system hydraulic brake fluid (the maximum operating temperature of 70 deg.] C). " this standard and ISO 4928:2006 and ISO 6118:2006 and the main technical differences for the following reasons.

--- About normative references, this standard has been adjusted with a technical differences, in order to adapt to the technical conditions of our country, the adjusted situation Status reflects in Chapter 2, "normative references", specifically adjusted as follows.

- using the equivalent to international standards GB/T 3512 instead of the ISO 188:1998 (see 6.1.1.4,6.2.1.3,6.3.1.1, 6.4.1.1,6.6.1,6.8.1.1);
- equivalents adoption of international standards GB/T 6031 instead of ISO 48 (see 6.7.1,6.7.2);
- modified with international standards of GB 12981 instead of ISO 4925 (see 6.1.3.5,6.2.3.1,6.3.3.5, 6.4.3.4,6.5.1.3.1,6.8.3.3,6.9.3.2);
- Remove the ISO 4926;
- increased cited GB/T 528 (see Table 1), GB/T 531.1 (see Table 1 and 6.7.2), GB/T 1690 (see Table 1), GB/T 2828.1 (see 7.1.2.2), GB/T 3672.1 (see 4.3), GB/T 5721 (see 8.3), GB/T 7758 (see

Table 1), GB/T 7759 (see Table 1), QC/T 311-2008 (see 6.10);

--- In order to distinguish different maximum seal temperature, increasing the classification, and the seal member to increase the maximum operating temperature of 150 deg.] C

Material (see 4.1);

--- In order to facilitate the quality control in the production process of the sealing member, increasing the rubber physical property requirements (see 4.2);

--- In order to adapt our standard system, the brake fluid from the test line with ISO 4926 was changed to meet the requirements of GB 12981 Request (see

6.1.3.5, 6.2.3.1, 6.3.3.5, 6.4.3.4, 6.5.1.3.1, 6.8.3.3, 6.9.3.2);

--- For a more comprehensive characterization of the performance of the seal, increasing the service durability requirements (see 5.9) and the operating endurance test procedure (see 6.10);

--- In order to distinguish different maximum temperature seal, 6.1.3.5 "into container 120 °C ± 2 °C aging chamber for 70h ± 2h" (See ISO 4928:2006) and "vessel was placed 70 °C ± 2 °C aging tank 120h ± 2h" (see ISO 6118:2006), to "Class A vessel containing the material was placed in 70 °C ± 2 °C aging tank (6.1.1.4) in 120h ± 2h; vessel equipped with a Type B material into 120 °C ± 2 °C aging chamber for 70h ± 2h; vessel equipped with a material placed in Class C 150 °C ± 2 °C aging chamber for 70h ± 2h";

--- To state more clearly, change the size of the result is represented by a text description instead formulated (see 6.1.4.2);

--- For ease of understanding and use different temperatures to distinguish the highest seal, precipitation test instrument formula centrifuge speed increases (see 6.2.1.4); different test procedures described in the precipitation experiment, different materials and different aging time and temperature (see 6.2.3), Increase ratio calculated precipitated (see 6.2.4);

--- In order to distinguish different maximum temperature seal, 6.3.3.6 "stroke device assembly into the aging tank, ± 2 °C at 120 °C Start at 70h ± 2h "(ISO 4928:2006) and" stroke of the aging device assembly into the box, starting at 70 °C ± 2 °C 120h ± 2h "(ISO 6118:2006), the words" the stroke device assembly into the aging tank, for the A-based material, the temperature aging box Was 70 °C ± 2 °C, time of 120h ± 2h; Class B materials, the aging oven temperature was 120 °C ± 2 °C, time 70h ± 2H; C for material type, aging oven temperature was 150 °C ± 2 °C, time 70h ± 2h";

--- In order to distinguish different maximum seal temperature, paragraph 5 "master cylinder 6.4.3 accumulated liquid temperature should be maintained at 120 °C ± 2 °C "(ISO 4928:2006)," the liquid accumulated in the master cylinder temperature should be maintained at 70 °C ± 2 °C "(ISO 6118.

2006) to 6.4.3.5, "A class of materials for the master cylinder accumulated liquid

temperature should be maintained at $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, Class B Material, the liquid temperature should be maintained at $120\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, materials for class C, the liquid temperature should be maintained at $150\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$;

--- In order to distinguish different maximum seal temperature, paragraph 6, "6.4.3 master cylinder assembly at a temperature of $120\text{ deg.}]^{\circ}\text{C}$ to $2\text{ }^{\circ}\text{C}$ (0.28 ± 0.03) Stroke/s [(1000 $\pm$ 100) Stroke/h] at a rate of run $70\text{h} \pm 2\text{h}$ "(ISO 4928:2006) and" master cylinder Assembly to (0.28 ± 0.03) Stroke/s [(1000 $\pm$ 100) Stroke/h] 120h running at a rate of temperature of $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C} \pm 2\text{h}$ "(ISO 6118:2006), to 6.4.3.6" A master cylinder assembly for a class of materials at $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, to (0.28 ± 0.03) Stroke/s [(1000 $\pm$ 100) Stroke/h] at a rate of operation $120\text{h} \pm 2\text{h}$. Master cylinder assembly Class B material at $\pm 120\text{ }^{\circ}\text{C}$ at $2\text{ }^{\circ}\text{C}$, to (0.28 ± 0.03) Stroke/s [(1000 $\pm$ 100) Stroke/h] Rate Run $70\text{h} \pm 2\text{h}$. The main class C material Cylinder assembly at $150\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, to (0.28 ± 0.03) Stroke/s [(1000 $\pm$ 100) Stroke/h] $70\text{h} \pm$ run at a speed 2h ";

--- In order to distinguish different maximum seal temperature, paragraph 6.4.3 6 "and the last stroke of 1.6mm ~ 3.2mm in During gradually pressurized to $3.5\text{MPa} \pm 0.3\text{MPa}$, so that the whole stroke to reach Ping Heng. "(ISO 4928:2006) and" and stroke the final boost phase during 1.6mm ~ 3.2mm to $7\text{MPa} \pm 0.3\text{MPa}$, so that the whole stroke to reach Ping Heng. " (ISO 6118:2006), to 6.4.3.6 "and the last stroke of 1.6mm ~ gradually pressurized during 3.2mm, A Class Material Feeding pressurized to $3.5\text{MPa} \pm 0.3\text{MPa}$, Class B and Class C material was pressurized to $7\text{MPa} \pm 0.3\text{MPa}$, the whole stroke to reach the level Balance ";

--- In order to distinguish different maximum seal temperature, paragraph 6.6.3 of 3 "at $120\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ by hot air aging $70\text{h} \pm 2\text{h}$ "(see ISO 4928:2006) and" $120\text{h} \pm 2\text{h}$ aged by hot air at $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ "(ISO 6118:2006), to 6.6.3.3 "Class A material for aging oven temperature was $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, time of $120\text{h} \pm 2\text{h}$; Class B materials, the oven temperature aging Degrees $120\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, time $70\text{h} \pm 2\text{h}$; C for material type, aging oven temperature was $150\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, time $70\text{h} \pm 2\text{h}$;

--- As the ISO 4928:2006 and ISO 6118. 6.7 representations in 2006 is unclear, poor operability, restated to 6.7, and increment the reference measuring method GB/T 531.1 Shore A hardness;

--- In order to distinguish different maximum seal temperature, paragraph 6.8.3 of the 4 "placed in the container $\pm 2\text{ }^{\circ}\text{C}$ aging tank holding $100\text{ }^{\circ}\text{C}$ $120\text{h} \pm 2\text{h}$ "(ISO 4928:2006) and" maintaining $120\text{h} \pm 2\text{h}$ placing the vessel $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ aging tank "(ISO 6118.

2006), to 6.8.3.4 "Class A material for the glass container into aging tank $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ aging $120\text{h} \pm 2\text{h}$; for Class B and C-based material, the glass container is placed in a $100\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ aging aging tank $120\text{h} \pm 2\text{h}$ ";

--- For ease of understanding, the test procedure in increased metal corrosion illustration, see 6.8.3.2 and 6.8.3.3 in FIG. 4 in FIG. 5;

--- Taking into account China's actual situation, to ISO 4928. 6118 2006 and ISO . 4.4 in 2006 have been adjusted and modified by Plus specific provisions factory inspection and type test and adjust to Chapter 7, "Inspection Rules";

--- taking into account the actual situation in China, an increase of 8.3 transport and storage.

ISO 4928:2006 and ISO 6118:2006 the text in exactly the same structure, and the present standard ISO 4928:2006 and ISO 6118.

Restructuring 2006 is as follows.

The ISO 4928:2006 and ISO 6118:2006 in the 4.1, 4.3 of this standard adjustment;

The ISO 4928:2006 and ISO 6118:2006 is 4.2, 8.1 of this standard adjustment;

The ISO 4928:2006 and ISO 6118:2006 is 4.3, 8.2 of this standard adjustment;

The ISO 4928:2006 and ISO 6118:2006 in 4.4, adjusted Chapter 7 of this standard;

This standard also made the following editorial changes. The "This standard" instead of "this International Standard." the standard proposed by China Petroleum and Chemical Industry Federation.

This Standards Technical Committee (SAC/TC35/SC3) rubber and administered by the National Technical Committee of Standardization sealing rubber article points.

This standard was drafted. Guizhou public Rubber Co., Ltd. Anhui Ding seals, rubber, plastics Design northwest Hospital, Zhuzhou Times New Material Technology Co., Ltd.

1 Scope

This standard specifies the vehicle hydraulic brake cylinder for non-petroleum base hydraulic brake fluid elastomeric cups and seal lips (hereinafter referred to as Sealing member) terms and definitions, general requirements,, test procedures, test rules finished, signs, packaging, transportation and storage.

This standard applies to the rubber seal molding drum brake cylinder with a diameter of not more than 60mm.

This standard is not for a disc brake with an elastomeric seal.

2 Normative references

The following documents for the application of this document is essential. For dated references, only applies to the version dated paper Pieces. For undated references, the latest edition (including any amendments) applies to this document.

Determination GB T 528/vulcanized rubber or thermoplastic rubber tensile stress - strain