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

GB/T 6578-2024

Replacing GB/T 6578-2008

**Hydraulic fluid power - Cylinders - Dimensions and tolerances
of housings for rod wiper-rings in reciprocating applications
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 6578-2008 "Groove types, dimensions and tolerances of dust seals for hydraulic cylinder piston rods" and is compatible with GB/T 6578-Compared with 2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The applicable piston rod diameter range has been changed (see Chapter 1, Chapter 1 of the 2008 edition);
- b) Added the terms and definitions defined in GB/T 3505-2009 (see Chapter 3);
- c) Added symbols A, B, C0, E, F, Ra, Rdeltac, Rmr, Rz (see Chapter 4);
- d) Added dust seal classification and E-type groove (see Chapter 5);
- e) Added seal schematic diagram (see Figure 2 to Figure 6);
- f) Added piston rod diameter series 400 and 450 (see Table 1 to Table 5);
- g) The fillet dimensions of type B grooves have been changed (see Figure 3, Figure 3 of the 2008 edition);
- h) The piston rod diameter applicable to the D-type detachable gland groove has been changed (see Table 4, Table 4 of the 2008 edition);
- i) Changed the dimensional requirements for the axial length C of the installation lead-in angle (see Table 6, Table 5 of the 2008 edition);
- j) Added groove surface roughness requirements (see Chapter 8).

This document is modified to adopt ISO 6195:2021 "Fluid transmission systems and

components - Reciprocating hydraulic cylinder piston rod dust ring groove size" Dimensions and Tolerances.

This document has the following structural adjustments compared to ISO 6195:2021.

--- Chapter 5 corresponds to the third paragraph of the introduction to ISO 6195:2021, and adds the title "5 Classification";

---6.1 corresponds to Chapter 5 and 8.1 of ISO 6195:2021;

---6.2~6.6 correspond to 6.1~6.5 of ISO 6195:2021 respectively;

---8.1 and 8.2 correspond to 8.2 and 8.3 of ISO 6195:2021 respectively.

The technical differences between this document and ISO 6195:2021 and their reasons are as follows.

--- ISO 5598 (see Chapter 3) was replaced by the normative reference GB/T 17446 to adapt to my country's technical conditions;

--- Added a chapter on "Classification" (see Chapter 5) to facilitate application;

--- Changed some contents of the general rules for grooves (see 6.1) to facilitate accurate expression;

--- The chamfer size of type B groove has been changed (see Figure 3) to adapt to my country's technical conditions;

--- Added the minimum requirement for the axial length C of the installation lead-in angle when the groove radial depth S = 12mm (see Table 6) to facilitate application.

The following editorial changes were made to this document.

--- In order to coordinate with the existing standards, the standard name will be changed to "Dimensions of dust ring grooves for reciprocating piston rods of hydraulic transmission hydraulic cylinders and tolerances";

--- Changed some symbols to distinguish them from the footnote symbols of the figure;

--- In Figures 4 and 5, the groove fillet angle $\geq R0.5$ is changed to $R \leq 0.5$, and L in Table 7 is changed to L1, which is an errata.

Introduction

In a fluid transmission system, power is transmitted and controlled by a pressurized fluid in a closed circuit.

Enter the hydraulic cylinder, thereby protecting its entire sealing system, hydraulic cylinder and other components and hydraulic fluid.

Hydraulic transmission cylinder Dimensions and tolerances of wiper grooves for

reciprocating piston rods

1 Scope

This document specifies the dimensions and tolerances for wiper grooves on reciprocating piston rods of hydraulic cylinders.

This document is applicable to the dust ring groove of the reciprocating piston rod of hydraulic cylinders with piston rod diameters of 4mm~450mm.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 3505-2009 Product Geometry Specification (GPS) Surface Structure Profile Method Terms, Definitions and Surface Structure Parameters (ISO 4287:1997, IDT) GB/T 17446 Fluid power systems and components vocabulary (GB/T 17446-2024, ISO 5598:2020, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 3505-2009 and GB/T 17446 apply to this document.

4 Symbols

The following symbols apply to this document.

A---Surface roughness of groove side;

B---Surface roughness of groove bottom;

C---Axial length of installation lead-in angle;

C0 --- Support length ratio reference line (see 4.5.4 in GB/T 3505-2009);

D1---groove bottom diameter;

D2---Aperture of the groove end;

d---piston rod diameter;

E---Piston rod surface roughness;

F---Surface roughness of installation lead-in angle;

L1---groove width;

L2---Total length of dustproof ring;

L3---Groove end width;

r1, r2 --- fillet radius;

Ra---arithmetic mean deviation of the assessed profile (see 4.2.1 in GB/T 3505-2009);

Rdeltac---Height difference of horizontal section of profile (see 4.5.3 in GB/T 3505-2009);

Rmr --- Profile support length ratio (see 4.5.1 in GB/T 3505-2009);