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

GB/T 45452-2025

**Hydraulic fluid power - Mounting dimensions for single rod
cylinders, 25 MPa series
(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 is modified to adopt ISO 6022:2006 "Installation dimensions of hydraulic transmission 25 MPa (250 bar) series single-rod cylinders".

This document has made the following structural adjustments compared to ISO 6022:2006.

---Added Chapter 6;

--- Chapters 7 to 9 correspond to Chapters 6 to 8 of ISO 6022:2006;

--- Table 6 and Table 8 correspond to Table 5 and Table 6 in ISO 6022:2006 respectively.

The technical differences between this document and ISO 6022:2006 and their reasons are as follows.

--- The scope of application has been changed (see Chapter 1) to adapt to my country's technical conditions and improve operability;

--- ISO 5598 (see Chapter 3) has been replaced by the normative reference GB/T 17446 to adapt to my country's technical conditions and improve operability.

Sexuality;

--- Added "D", "Y" and "PJ" basic dimensions (see Figure 1, Table 1), the "VE" of the cylinder diameter 140 was changed from "48" to "45", and the cylinder diameter 180 the "ZJ" of the system was changed from "497" to "500" (see Table 1) to adapt to my country's technical conditions and improve operability;

--- Added the basic dimensions of four cylinder diameters of 90, 110, 220 and 280 (see Table 1 to Table 6) to adapt to my country's technical conditions;

--- ISO 4395 (see 8.2, Table 1) has been replaced by the normative reference GB/T 2350 to

adapt to my country's technical conditions and improve the reliability of the product.

Operability;

--- Deleted the MP4 and MP6 installation types in Figure 3, Table 3 and Chapter 6 of ISO 6022:2006, and changed the dimension "L or LT" was changed from "113" to "100", and the size "MR or MS" was changed from "113" to "100" (see Figure 3 and Table 3) to accommodate our the technical conditions of the country improve operability;

---Change the size "ZB" of cylinder diameter 180 from "502" to "505" (see Figure 4, Table 4) to adapt to my country's technical conditions and improve the reliability.

Operability;

--- Added MS2 installation type (see Figure 5, Table 5 and Chapter 7) to adapt to the actual installation size of hydraulic cylinders in my country;

---Change the thread tolerance grade "6g" of the oil port "EE" in ISO 6149-1 to "6H", and delete the thread tolerance grade "6g" of the oil port "EE" in ISO 1179-1.

The thread tolerance grade "6g" of ISO 6164 and ISO 6162-1 is changed to "6H" (see

Table 6), in order to adapt to my country's technical conditions and improve operability;

--- Added the "English" series corresponding to the "Metric" series in the ISO 6164 and ISO 6162-1 oil port flange nominal diameter DN (see

Table 6), making it more convenient to select;

---Change the ISO 6162-1 oil port installation dimension "FF" from "12.7" to "13" for cylinder diameters 63 and 80, and change the ISO 6162-1 oil port installation dimension "FF" from "12.7" to "13" for cylinder diameters 100 and 125 ISO 6162-1 oil port installation dimensions "FF" and "EA" changed from "19.1" to "19.2" and "22.3" to "22.2"; cylinder diameter the ISO 6162-1 port installation dimension "FF" of 140, 160, 180 and 200 has been changed from "25.4" to "25.6";

The ISO 1179-1 oil port installation size "EC" of 320 is changed from "32" to "36", and the ISO 6149-1 oil port installation size "EE" and "EC" changed from "M60x2" to "M48x2", "32" changed to "36", ISO 6162-1 oil port installation size "FF" changed from "31.8" Changed to "32" (see Table 6) to meet my country's technical requirements;

--- ISO 6099 (see 4.3) has been replaced by the normative reference GB/T 9094 to adapt to my country's technical conditions and improve operability.

Sexuality;

--- ISO 3320 (see Chapter 5, Table 1) has been replaced by the normative reference GB/T 2348 to adapt to my country's technical conditions and improve Operability;

--- Added "travel limit deviation" (see Chapter 6) to adapt to my country's technical

conditions;

- The limit deviation value of stroke " $S > 8000$ " and the limit deviation of installation size (see Table 7 and Table 8) have been added to adapt to my country's technology condition;
- Added requirements for the type and size of piston rod ends (see 8.2) to adapt to my country's technical conditions and improve operability;
- ISO 8132 (see 8.3) has been replaced by the normative reference GB/T 39949.1 to adapt to my country's technical conditions and improve operability.

Acting nature.

The following editorial changes were made to this document.

- In order to coordinate with the existing standards, the name of the standard is changed to "Installation Dimensions of Hydraulic Transmission 25MPa Series Single Rod Cylinders";
- The drawing was redrawn according to my country's mechanical engineering drawing standards;
- Additional information on size selection values is added to Tables 1 to 6;
- Delete "8xphi" in Table 2, and add "8xphiFBEQS" and 22.5° in Figure 2;
- Change the column "Swing angle Z" in Table 3 to the section of Table 3;
- Deleted "Note" in Table 6.

1 Scope

This document specifies the installation dimensions of the 25MPa series hydraulic single-rod cylinders to meet interchangeability requirements.

This document is applicable to hydraulic single-rod cylinders (hereinafter referred to as hydraulic cylinders) with a nominal pressure of 25MPa and a cylinder diameter of 50mm~320mm.

NOTE: This document provides basic guidelines only and does not restrict its technical application, allowing manufacturers to use it flexibly in the design of hydraulic cylinders.

2 Normative references

The contents of the following documents constitute 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 2348 Fluid transmission systems and components - Cylinder diameter and piston rod diameter (GB/T 2348-2018, ISO 3320:2013, MOD) GB/T 2350 Fluid transmission systems and components Piston rod thread types and dimension series (GB/T 2350-2020, ISO 4395.

2009,MOD)

GB/T 9094 Fluid transmission system and component cylinder installation dimensions and installation type codes (GB/T 9094-2020, ISO 6099.

2018, IDT)

GB/T 17446 Fluid power systems and components vocabulary (GB/T 17446-2024, ISO 5598:2020, MOD) GB/T 39949.1 Installation dimensions of hydraulic transmission single-rod cylinder accessories Part 1.16MPa medium series and 25MPa series (GB/T 39949.1-2021,ISO 8132:2014, MOD)

3 Terms and definitions

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

4 Dimensions

4.1

The installation dimensions of the hydraulic cylinder should be selected from Figures 1 to 5 and the corresponding Tables 1 to 5.