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

GB/T 38205.1-2025

**Hydraulic fluid power - Mounting dimensions for single rod
cylinders, 16 MPa series - Part 1: Medium 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 Part 1 of GB/T 38205 "Installation Dimensions of Hydraulic Transmission 16MPa Series Single Rod Cylinders".

The following parts have been published.

- Part 1: Medium series;
- Part 2: Compact series with cylinder diameter of 25 mm to 220 mm;
- Part 3: Compact series with cylinder diameters of 250 mm to 500 mm.

This document is modified to adopt ISO 6020-1:2007 "Hydraulic transmission 16MPa (160bar) series single-rod cylinder installation dimensions Part 1 Part. Medium Series.

The technical differences between this document and ISO 6020-1:2007 and their reasons are as follows.

- The scope of application of the standard has been changed (see Chapter 1) to adapt to my country's technical conditions and improve operability;
- The normative references GB/T 17446 replace ISO 5598 (see Chapter 3), GB/T 9094 replaces ISO 6099 (see 4.3, Chapter 7), GB/T 2348 replaced ISO 3320 (see Chapter 5), GB/T 2350 replaced ISO 4395 (see 8.2), GB/T 39949.1 replaces ISO 8132 (see 8.3) to adapt to my country's technical conditions and improve operability;
- Added eight cylinder sizes. 90mm, 110mm, 140mm, 180mm, 220mm, 280mm, 360mm, 450mm diameter (see Table 1 to Table 7) to adapt to my country's technical conditions and

improve operability;

--- Deleted the provisions of "Installation type code marking" in ISO 6020-1:2007, because its code marking has been specified in Chapter 7;

--- 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;

--- Deleted ISO 1179-1 oil port "EE" thread tolerance grade "6g" in Table 7 of ISO 6020-1:2007, and replaced ISO 6149-1 oil port "EE" thread tolerance grade "6g" in Table 7 of ISO 6020-1:2007.

The thread tolerance grade "6g" of "EE" in ISO 6164 and ISO 6162-1 was changed to "6H", and the thread tolerance grade "ED" in ISO 6164 and ISO 6162-1 was changed to "6H".

The grade "6g" was changed to "6H" (see Table 7) to adapt to my country's technical conditions and improve operability;

---Changed the piston stroke division range and the corresponding installation size limit deviation (see Table 8) to adapt to my country's technical conditions and improve Operability;

---Changed the piston stroke division range and the corresponding stroke limit deviation (see Table 9) 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 16MPa Series Single Rod Cylinders Part 1 Divided into. Medium Series";

---The drawing was redrawn according to my country's mechanical engineering drawing standards;

--- Deleted the footnote in Chapter 1;

--- Deleted the "Note" in Figure 1, and added the notes in Figures 3 and 4;

--- Additional information on size selection values is added to Tables 1 to 7;

--- Delete the "Swing angle Z" column in Table 4, and add the paragraph "The minimum swing angle Z is 4°" in Table 4;

--- Added "Units are in millimeters unless otherwise indicated" in the upper right corner of Table 7;

--- Changed the travel range marking method in Table 8 and Table 9.

Introduction

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

A hydraulic actuator that converts pressure energy into mechanical energy to achieve linear motion. The moving components include pistons, piston rods, etc.

GB/T 38205 aims to determine the installation dimensions of the 16MPa series single-rod cylinders and is intended to consist of three parts.

--- Part 1: Medium series. The purpose is to determine the installation dimensions of 16MPa series medium single-rod hydraulic cylinders.

--- Part 2: Compact series with cylinder diameters of 25 mm to 220 mm. The purpose is to define the 16 MPa series of compact single-rod hydraulic cylinders (cylinder diameter 25mm~220mm) installation dimensions.

--- Part 3: Compact series with cylinder diameters of 250 mm to 500 mm. The purpose is to determine the 16 MPa series of compact single-rod hydraulic Installation dimensions of cylinder (cylinder diameter 250mm~500mm).

Hydraulic transmission 16MPa series single output Installation dimensions of rod cylinder
Part 1: Medium series

1 Scope

This document specifies the installation dimensions of the 16MPa series medium-sized hydraulic single-rod cylinders to meet interchangeability requirements.

This document is applicable to round heads with a nominal pressure of 16MPa, a cylinder diameter of 25mm~500mm and a cylinder diameter of 200mm~500mm Square head hydraulic single rod cylinder (hereinafter referred to as hydraulic cylinder).

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 6 and the corresponding Tables 1 to 6.The limit deviations are shown in Tables 8 and 9.

4.2

The types and dimensions of oil ports and flanges shall comply with Table 7.

4.3

All dimensions in this document are marked according to the codes specified in GB/T 9094.

5 Cylinder diameter

The cylinder diameters covered by this document shall comply with GB/T 2348, see Table 1.