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

**GB/T 46622.1-2025**

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**Hydraulic fluid power - Mounting dimensions of screw-in  
cartridge valves - Part 1: Metric threads**

液压传动 螺纹插装阀安装连接尺寸 第1部分：米制螺纹

**(English Translation)**

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## Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 46622 "Hydraulic Transmission Threaded Cartridge Valves - Installation Connection Dimensions". GB/T 46622 has been published as...

Part 2.

---Part 1: Metric Threads this document is modified to adopt ISO 7789:2007 "Hydraulic transmission of two-, three- and four-port threaded cartridge valves with cartridge ports".

The technical differences between this document and ISO 7789:2007, and the reasons therefor, are as follows.

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

Actual nature;

---ISO 1219-1 (see Chapter 3) has been replaced with the normatively referenced GB/T 786.1 to adapt to my country's technical conditions and improve reliability.

Operability;

---ISO 1302 (see Chapter 5) has been replaced with the normatively referenced GB/T 131 to adapt to my country's technical conditions and improve reliability.

Operability;

---ISO 1101 (see Chapter 5) has been replaced with the normatively referenced GB/T 1182 to adapt to my country's technical conditions and improve operability.

Actual nature;

---ISO 2768-2 (see Chapter 5) has been replaced with the normatively referenced GB/T 1184 to adapt to my country's technical conditions and improve reliability.

Operability;

---ISO 2768-1 (see Chapter 5) has been replaced with the normatively referenced GB/T 1804 to adapt to my country's technical conditions and improve reliability.

Operability;

---The note in Chapter 5 has been deleted, and the content has been incorporated into the requirements of the corresponding clause (see Chapter 5) to adapt to my country's technical conditions and improve operability.

Actual nature;

---ISO 6149-1 has been replaced by the normatively referenced GB/T 2878.1 (see Figures 1-9, Tables 1, 3, 5, 7, and 9).

Tables 11, 13, 15, and 17 are provided to adapt to my country's technical conditions and improve operability.

---ISO 5783 (see Tables 1, 3, 5, 7, 9, 11, and 13) has been replaced by the normatively referenced GB/T 14043.1.

Tables 15 and 17) are designed to adapt to my country's technological conditions and improve operability;

---ISO 16874 (see 6.4) has been replaced with the normatively referenced GB/T 36997 to adapt to my country's technical conditions and improve operability.

Acting.

The following editorial changes have been made to this document.

---The standard title has been changed to "Hydraulic Transmission Threaded Cartridge Valve Installation Connection Dimensions Part 1: Metric Thread";

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

---Delete the annular area of settlement in the figure, delete footnote b, and change footnote c to footnote b (see Figures 1-9);

---The standard numbers labeled in each figure have been deleted;

---References have been removed.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Hydraulics and Pneumatics (SAC/TC3).

## Introduction

The application of threaded cartridge valves in hydraulic transmission systems is becoming increasingly widespread. Cartridge valves require the use of cartridges, and to ensure the interoperability of cartridge valves...

To achieve this, a universal standard for socket sizes needs to be established.

GB/T 46622 "Hydraulic Transmission Threaded Cartridge Valve Installation Connection Dimensions" aims to determine the installation connection dimensions of hydraulic threaded cartridge valves.

It consists of two parts.

---Part 1: Metric Threads. The purpose is to determine the installation connections for hydraulic two-port, three-port, and four-port threaded cartridge valves using metric threads.

Connection dimensions (insertion hole dimensions) and related parameters.

---Part 2: Imperial Threads. The purpose is to determine the installation connections for hydraulic two-port, three-port, and four-port threaded cartridge valves using imperial threads.

Connection dimensions (insertion hole dimensions) and related parameters.

Hydraulic drive threaded cartridge valve installation connection dimensions Part 1: Metric Thread

## 1 Scope

This document specifies the installation connection dimensions (cartridge hole dimensions) for hydraulic two-port, three-port, and four-port threaded cartridge valves using metric threads.

Relevant parameters.

This document applies to threaded cartridge valves used in industrial equipment, mobile machinery, and other applications.

## 2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 131 Product Geometric Specification (GPS) - Representation of Surface Structure in Technical Product Documents (GB/T 131-2006, ISO 1302:2002, IDT) GB/T 786.1 Graphical symbols and circuit diagrams for fluid transmission systems and components - Part 1: Graphical symbols (GB/T 786.1-2021, ISO 1219-1:2012, IDT) GB/T 1182 Product Geometric Specification (GPS) - Geometric Tolerances. Shape, Orientation, Position and Runout Tolerances (GB/T 1182-2018, ISO 1101:2017, MOD) GB/T 1184 Geometric Tolerances - Unspecified Tolerance Values (GB/T 1184-1996, eqv ISO 2768-2:1989) GB/T 1804 General Tolerances - Tolerances for linear and angular dimensions without specified tolerances (GB/T 1804-2000, eqv ISO 2768-1)

1989)

GB/T 2878.1 Hydraulic transmission connections - Standard threaded port and stud end - Part 1: Slanted port (GB/T 2878.1-2025, ISO 6149-1:2022, IDT) GB/T 14043.1 Identification designations for hydraulic transmission valves - Part 1: Mounting surfaces and valve bores (GB/T 14043.1-2022) ISO 5783:2019, MOD) GB/T 17446 Glossary of Fluid Transmission Systems and Components (GB/T 17446-2024, ISO 5598:2020, MOD) GB/T 36997 Identification of hydraulic transmission manifold assemblies and their components (GB/T 36997-2018, ISO 16874:2004) IDT)

## 3 Terms, Definitions and Symbols

The terms and definitions defined in GB/T 17446 and the graphic symbols given in GB/T 786.1 apply to this document.

## 4 Dimensions

### 4.1

The installation connection dimensions for two-port, three-port and four-port threaded cartridge valves shall be selected from the drawings and tables specified in 4.2 to 4.10.

### 4.2

Installation and connection dimensions of two-port valves (excluding relief valves) with a maximum oil port diameter range of 5mm to 20.5mm are shown in Figure 1 and Table 1.