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

**GB/Z 43078-2023**

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**Connections for hydraulic fluid power - Assembly instructions  
for adjustable stud end connectors**

液压传动连接 螺柱端可调管接头的安装指导

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## Foreword

This document was issued on 7 September 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 April 2024.

It is a GB/Z guiding technical document: it does not oblige, it guides.

It is classified under ICS 23.100.40, Chinese classification J20.

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 modified using ISO /T S11686.2017 "Pipe joints with adjustable stud ends for hydraulic transmission and general purposes"

"Installation Guidelines for O-ring Sealed Joints", the document type was adjusted from ISO technical specifications to my country's national standardized guiding technology document.

Compared with ISO /T S11686.2017, this document has made the following structural adjustments.

---4.2.1 corresponds to 4.2.1.1 in ISO /T S11686.2017.

The technical differences between this document and ISO /T S11686.2017 and their reasons are as follows.

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

---Replaced ISO 5598 (see Chapter 3) with normatively quoted GB/T 17446 to adapt to my

country's technical conditions and improve operability.

Doing things.

The following editorial changes have been made to this document.

---In order to coordinate with the existing standards, the name of the standard is changed to "Installation Guidelines for Adjustable Pipe Joints at Stud Ends of Hydraulic Transmission Connections";

---Replaced ISO 6149 (all parts) with the informative reference GB/T 2878 (all parts);

---Footnote d has been added to Table A.2.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

This document is proposed by China Machinery Industry Federation.

This document is under the jurisdiction of the National Hydraulic and Pneumatic Standardization Technical Committee (SAC/TC3).

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## Introduction

In hydraulic fluid power systems, power is transmitted and controlled through pressurized fluid in a closed circuit.

The hydraulic component is connected to the conduit (hard pipe or hose) through its oil port with a pipe joint. The hard pipe is a rigid conduit and the hose is a flexible conduit. screw

The adjustable pipe joint at the column end allows the pipe joint to be adjusted to a specific orientation to complete the connection positioning before final tightening.

Hydraulic transmission connection

## Installation Instructions for Stud-End Adjustable Pipe Couplings

### 1 Scope

GB/Z 43078-2023 covers the fitting of adjustable stud-end connectors sealed with an O-ring into the ports of hydraulic components - what has to be done before installation and how the joint itself is made, with an annex on telling ports, stud ends and plugs apart and on the ones that can be confused with each other. An adjustable stud end exists so that an elbow or a tee can be turned to face the pipe run and then locked in that orientation, and the freedom that makes it useful is what makes it easy to get wrong: it can be run down against the wrong seat, tightened with the O-ring pinched or displaced, or pulled out of the position it was set to during final tightening. The preparation clauses keep the protective caps and plugs in place until the moment of assembly, so that sealing faces stay clean and nothing enters the circuit, and call for the port and the fitting to be examined for burrs, cracks and scratches, since a scored sealing face will weep however hard it is tightened. Leaking stud-end joints are a routine source of fluid loss and contamination on machines. A guidance document, modified in its adoption of ISO/TS 11686:2017, for fitters, maintenance departments and machine builders.

This document provides general installation instructions for pipe fittings with adjustable stud ends and O-rings. Different types of ports and studs are given.

Ends or plugs may be mixed (see Appendix A). The installation of pipe joints in compliance with this document can significantly reduce leakage in hydraulic systems.

This document applies to the most commonly used ports, stud ends and plugs in hydraulic transmission systems.

### 2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

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

this document.

GB/T 17446 Fluid transmission system and component vocabulary (GB/T 17446-2012, ISO 5598.2008, IDT)

### 3 Terms and definitions

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

## 4 Installation instructions for stud-end adjustable pipe joints

### 4.1 Preparation before installation

4.1.1 In order to protect the sealing surface and prevent the system from being contaminated, the protective caps or plugs of the pipe joints and oil ports should not be removed before installation.

4.1.2 When starting installation, remove the protective cap or protective plug, and check the pipe joints and oil ports to ensure that the mating parts have no burrs, cracks, or scratches and any foreign objects.

4.1.3 If the pipe joint is not equipped with an O-ring, appropriate installation tools should be used to install the O-ring on the stud end of the pipe joint. Be careful not to cut it.

Broken or scratched O-ring.

4.1.4 The O-ring should be coated with working medium or lubricating oil compatible with its material.

### 4.2 Installation

#### 4.2.1 Example

The installation steps specified in 4.2.2~4.2.6 are shown in Figure 1.