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

**GB/T 2878.3-2017**

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**Connections for hydraulic fluid power -- Ports and stud ends  
with metric threads and O-ring sealing -- Part 3: Light-duty stud  
ends (L series)**

**(English Translation)**

**Issued on: May 12, 2017**

**Implemented on: December 1, 2017**

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**Issued by: General Administration of Quality Supervision, Inspection and  
Quarantine of the People's Republic of China**

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### Foreword

GB/T 2878 "Hydraulic drive connection with metric and O-ring seal oil port and stud end" is divided into 4 parts.

- Part 1. Port;
- Part 2. Heavy - duty stud ends (S - series);
- Part 3. Light stud ends (L series);
- Part 4. Hex plugs.

This part is part 3 of GB/T 2878.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the re-drafting method to modify ISO 16149-3.:2006 "for the hydraulic drive and general purpose stud end belt ISO 261 Oval and stud ends for metric and O-rings - Part 3. Dimensions, type, test method and technology for light (L series) stud ends Technical requirements".

The technical differences between this section and ISO 6149-3.:2006 are as follows.

--- on the normative reference documents, this part made a technical differences in the adjustment to meet China's technical conditions, adjust the situation is reflected in Chapter 2, "normative reference documents", the specific adjustments are as follows.

Replace GB 261 (see Table 1) with GB/T 193 with international standard modifications;

- Replace ISO 965-1 with GB/T 197 with international standard modification (see Table 1);

Replace GB 6149-2 (see Table 1) with GB/T 2878.2 with international standard modification;

Replace GB 4759-1 (see Chapter 4) with GB/T 3103.1-2002 equivalent to the international standard;

- Replace ISO 48 with the equivalent GB/T 6031 with international standards (see Chapter 6);

Replace GB 5598 (see Chapter 3) with GB/T 17446 equivalent to the international standard;

Replace GB 1987 (see Chapter 7) with GB/T 26143 equivalent to the international standard.

- Change the material of the stud from mild steel to carbon steel (see 5.1, ISO 6149-3.:2006, 5.1).

- Change the stud end marking requirements to recommendation (see Chapter 9, Chapter 9 of ISO 6149-3.:2006).

This section makes the following editorial changes.

- the deletion of six footnotes in the international standard text narrative;

- Table 3, Table 5, and Table 4 of this part are adjusted in Table 5, Table 4 and Table 3 of ISO 6149-3.:2006 in the order of appearance;

- The equivalent unit "bar" of the pressure in ISO 6149-3.:2006 was deleted, leaving only "MPa".

This part is made by the China Machinery Industry Federation.

This part of the National Hydraulic and Pneumatic Standardization Technical Committee (SAC/TC3) centralized.

This part is responsible for drafting units. Zhejiang Suqiang Ge Hydraulic Co., Ltd.

This part participates in the drafting unit. Haiyan Pipe Fitting Manufacturing Co., Ltd., Ningbo Guangtian Saikesi Hydraulic Co., Ltd., Panzhuhua Iron and Steel Group Engineering Technology Co., Ltd. Industrial Branch Hydraulic Annex Factory, Eaton Hydraulic (Ningbo) Co., Ltd.

## Introduction

In a hydraulic drive system, the power is transmitted and controlled by the pressurized fluid within the closed circuit. In general applications, the fluid (liquid or gas) can be delivered under pressure.

The hydraulic element is connected to the hard pipe or hose through the stud end of the threaded port with the pipe joint.

It is recommended that the newly designed hydraulic system and components be preferentially used with the threaded ports and stud ends of the GB/T 2878 series, as this series the mouth and the stud ends are sealed with metric threads and O-rings. We hope to

help you make a reasonable choice.

Hydraulic drive connection Oval with metric and O-ring seals Spiral ends Part 3. Light stud ends (L series)

## 1 Scope

This part of GB/T 2878 specifies the dimensions and performance of metric and non-adjustable lightweight stud ends (L series) and O-rings.

Summarize the test procedure.

The maximum working pressure for non-adjustable stud ends in accordance with this section is 40 MPa, which regulates the maximum working pressure for the stud end is 31.5MPa. Permissible working pressure should be based on the stud end size, material, structure, working conditions and application conditions to determine.

Products that meet the dimensions of this part are not guaranteed to meet specified performance. Manufacturers should follow the specifications contained in this section to ensure that the components meet the specified performance.

**Note 1:** An effective number of tests are required to confirm the performance requirements of the pipe fittings made of carbon steel.

**Note 2:** This part applies to the fittings of GB/T 14034.1-2010 and ISO 8434-2 and the plugs of GB/T 2878.4. Related hose connector technology for technical specifications see ISO 12151-4.

**Note 3:** This section of the introduction recommends a new design for the hydraulic drive port and stud end.

## 2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 193 Common thread diameter and pitch series (GB/T 193-2003, ISO 261.:1998, MOD) GB/T 197 Common thread tolerances (GB/T 197-2003, ISO 965-1.:1998, MOD) GB/T 3103.1-2002 Fasteners - Tolerances bolts, screws, studs and nuts (idtISO 4759-1.:2000) GB/T 3452.2-2007 O-shaped rubber seals for hydraulic applications - Part 2. Specification for appearance quality inspection (ISO 3601-3.

2005, IDT)

GB/T 6031 Determination of hardness of vulcanized rubber or thermoplastic rubber (10 to 100 IRHD) (GB/T 6031-1998, idtISO 48.

1994)

GB/T 17446 fluid transmission system and component vocabulary (GB/T 17446-2012, ISO 5598.:2008, IDT) GB/T 2878.2 Hydraulic drive connection Port and stud ends with metric and O-ring seals Part 2. Heavy duty studs (S series) (GB/T 2878.2-2011, ISO 6149-2.:2006, IDT) GB/T 26143 Hydraulic pipe joint test method (GB/T 26143-2010, ISO 19879.:2010, IDT)

### 3 Terms and definitions

GB/T 17446 Definitions and the following terms and definitions apply to this document.

Adjustable stud end when tightening the coupling nut, allow the fitting to adjust the direction to complete the connection of the stud end fitting.

**Note:** This type of stud end is mainly used for profiled pipe joints (such as. T-shaped, cross and elbow).