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

GB/T 42086.3-2024

**Connections for hydraulic fluid power - Flange connections -
Part 3: Square series of 42 MPa, DN25~DN80**

液压传动连接 法兰连接 第3部分：42 MPa、DN25~DN80方形系列

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Materials
5 Selection
6 Tolerance
7 Surface requirements
8 Pressure/Temperature Requirements
9 Mark
10 Flange connections and parts nomenclature
Appendix A (Informative) O-ring codes and sizes
Appendix B (informative) Recommended installation procedures and tightening torques for flange connections in accordance with this document
Reference

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 3 of GB/T 42086 "Flange connections for hydraulic transmission". GB/T 42086 has been published for the following part.

--- Part 1.3.5MPa~35MPa, DN13~DN127 series;

--- Part 2.42MPa, DN13~DN76 series;

--- Part 3.42MPa, DN25~DN80 square series.

This document is modified to adopt ISO 6164:2018 "Four-screw one-piece square pipe for hydraulic fluid transmission with a pressure of 42 MPa and a diameter of DN25 to DN80" Flange connection.

This document has the following structural adjustments compared to ISO 6164:2018.

---4.5 corresponds to the note to 4.4 in ISO 6164:2018, and 4.6 corresponds to the independent paragraph between Figure 1 and Table 1 in ISO 6164:2018.

The technical differences between this document and ISO 6164:2018 and their reasons are as follows.

--- ISO 5598 (see Chapter 3) has been replaced by the normative reference GB/T 17446 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 10763 (see Chapter 4) has been replaced by the normative reference GB/T 41354 to adapt to my country's technical conditions and improve the reliability of the product.

Operability;

--- The normative reference GB/T 70.1 replaces ISO 4762, GB/T 3098.1 replaces ISO 898-1, GB/T 5783 replaces Changed to ISO 4017 (see 4.3) to adapt to my country's technical conditions and improve operability;

--- ISO 3601-3 (see 4.4) has been replaced by the normative reference GB/T 3452.2 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 7089 (see 4.6) has been replaced by the normative reference GB/T 97.1 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 2768-1 (see 6.1) has been replaced by the normative reference GB/T 1804 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 9227 (see 7.1, 7.2) has been replaced by the normative reference GB/T 10125 to adapt to my country's technical conditions and improve the reliability of the product.

Operability;

--- Changed the technical conditions for the areas where red rust may appear during the salt spray test (see 7.3) to adapt to my country's technical conditions and improve High operability;

--- ISO 1302 (see 7.7) has been replaced by the normative reference GB/T 131 to adapt to my country's technical conditions and improve operability;

--- ISO 19879 (see 8.1) has been replaced by the normative reference GB/T 26143 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 261 (see Table 1) was replaced by the normative reference GB/T 193 to adapt to my country's technical conditions and improve operability;

--- ISO 724 (see Table 1 and Table B.1) has been replaced with the normative reference GB/T 196 to adapt to my country's technical conditions and improve the reliability of the product.

Operability.

The following editorial changes were also made to this document.

--- Change the standard name to "Hydraulic transmission connection flange connection Part 3.42MPa, DN25~DN80 square series";

--- Added Note (see 7.2);

--- Corrected the editorial errors in ISO 6164:2018 and deleted "Table 2" in the sentence (see 8.3);

--- In Figure 1, reference numbers 7 and 8 and descriptions are added;

--- Deleted footnote c in Table 1;

--- Added the diagram of the grooveless flange head (see Figure 4) and the naming example;

---Adjusted the order of appendices.

Introduction

In the hydraulic system, flange pipe joints are important hydraulic components for pipeline connection. They are not only required to be safe, reliable and leak-free, but also require GB/T 42086 aims to standardize the general requirements and dimensions of flange connections and is intended to consist of three parts.

--- Part 1.3.5MPa~35MPa, DN13~DN127 series. The purpose is to determine the 3.5MPa~35MPa pressure, etc.

Flanges for split and one-piece flange clamp type pipe joints and hose joints (DN13~DN127) fastened with four screws Common requirements and requirements for flange heads, split flange clamps (FCS and FCSM), one-piece flange clamps (FC and FCM), ports and mounting surfaces Dimensional specifications, as well as the dimensions of the sealing rings and sealing grooves used in conjunction.

--- Part 2.42MPa, DN13~DN76 series. The purpose is to determine the 42MPa pressure level for four-screw fastening Split and integrated flange clamp type hard pipe joints and hose joints (DN13~DN76) flange heads, split flange clamps General requirements and dimensional specifications for flange clamps (FCS and FCSM), integral flange clamps (FC and FCM), ports and mounting surfaces, and accessories.

The dimensions of the sealing ring and sealing groove to be used.

--- Part 3.42MPa, DN25~DN80 square series. The purpose is to determine the square flange with a pressure level of 42MPa (DN25~DN80) general requirements and dimensional specifications, as well as the dimensions of the sealing rings and sealing grooves used in conjunction with them.

Hydraulic transmission connection flange connection Part 3.42MPa, DN25~DN80 square series

1 Scope

This document specifies the square flange clamp type hard pipe fittings and hose fittings (DN25~DN80) for 42MPa, four-screw fastening the general requirements and dimensions of flange heads, flange clamps, flange oil ports and mounting surfaces; also specifies the requirements for sealing rings and sealing grooves used in conjunction with them and size.

This document applies to connections for hydraulic systems of industrial and commercial products where threaded pipe fittings are not convenient to use.

2 Normative references

The contents of the following documents constitute the 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 70.1 Hexagon socket head screws (GB/T 70.1-2008, ISO 4762:2004, MOD) GB/T 97.1 Flat washers Grade A (GB/T 97.1-2002, eqvISO 7089.2000) GB/T 131 Product Geometry Specification (GPS) - Method of representation of surface structure in technical product documents (GB/T 131-2006, ISO 1302:2002, IDT) GB/T 193 Common thread diameter and pitch series (GB/T 193-2003, ISO 261:1998, MOD) GB/T 196 Basic dimensions of common threads (GB/T 196-2003, ISO 724:1993, MOD) GB/T 1804 General tolerances Tolerances of linear and angular dimensions without tolerance indication (GB/T 1804-2000, eqvISO 2768-1.

1989)

GB/T 3098.1 Mechanical properties of fasteners Bolts, screws and studs (GB/T 3098.1-2010, ISO 898-1:2009, MOD) GB/T 3452.2 O-rings for hydraulic and pneumatic applications - Part 2: Appearance quality inspection specification (GB/T 3452.2-2007, ISO 3601-3:2005, IDT) GB/T 5783 Hexagon head bolts with full thread (GB/T 5783-2016, ISO 4017:2014, MOD) GB/T 10125 Artificial atmosphere corrosion test Salt spray test (GB/T 10125-2021, ISO 9227:2017, MOD) GB/T 17446 Fluid power systems and components