

ICS 23.100.50
CCS J 20



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

GB/T 15623.2-2017

Replacing GB/T 15623.2-2003

**Hydraulic fluid power -- Electrically modulated hydraulic control
valves -- Part 2: Test methods for three-port directional
flow-control valves
(English Translation)**

Issued on: November 1, 2017

Implemented on: May 1, 2018

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

Table of Contents

Foreword
Introduction
1 Scope
2 Normative references
3 Terms, definitions and symbols
4 Test conditions
5 Test device
6 Accuracy
7 Electrical characteristics of valves without integrated amplifier Test
8 Performance Test
Pressure pulse test
10 Result is expressed
11 Marking instructions
Appendix A (Informative) Test Implementation Guide

Foreword

GB/T 15623 "hydraulic transmission electric modulation hydraulic control valve" is divided into three parts.

- Part 1. Four way directional flow control valve test method;
- Part 2. Three way directional flow control valve test method;
- Part 3. Pressure control valve test method.

This section GB/T 15623 Part 2.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB/T 15623.2-2003 "hydraulic transmission electro-hydraulic control valve Part 2. Three-way directional flow control Valve test method ", compared with GB/T 15623.2-2003, the main technical changes are as follows.

- New reference standard GB/T 19934.1, JB/T 7033-2007 (see Chapter 2);
- Removed the term "electro-modulated hydraulic direction flow control valve", added the term "electro-modulated hydraulic tee direction flow control valve" "Input signal dead zone", "Threshold" and "Rated input signal" (see 3.1);

- Modify the "3.2 symbols and units" of the relevant content (see Table 1);
- Test conditions, delete the "hydraulic fluid temperature" and "supply pressure", an increase of "fluid viscosity grade" and "pressure drop" (see Table 2);
- Modify the test circuit (see Figure 1, Figure 10 and Figure 11);
- Increased instrument accuracy "resistance" and "dynamic range" requirements (see 6.1 and 6.2);
- Increased "coil resistance" cold, hot test (see 7.2.1 and 7.2.2);
- Removed the "durability test" and "environmental test" (see the 2003 edition Chapter 9 and Chapter 11).

This section adopts the redrafted law to modify the use of ISO 10770-2:2012 "hydraulic transmission electric modulation hydraulic control valve Part 2. Three Directional flow control valve test method "(in English).

This part of ISO 10770-2:2012 technical differences and the reasons are as follows.

- On the normative references, this section made a technical difference with the adjustment to adapt to China's technical conditions, adjust the situation Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.
 - Replace ISO 1219-1 (see 3.2) with GB/T 786.1 equivalent to international standards;
 - Replacing ISO 3448 with International Standard GB/T 3141 modified (see Tables 2 and 10.2.1);
 - Replace IEC 60617 with GB/T 4728.1 equivalent to international standards (see 3.2);
 - Equivalent with the international standard GB/T 7631.2 instead of ISO 6743-4 (see Table 2);
 - Replacing ISO 4406 with International Standard GB/T 14039 modified (see Table 2);
 - Replace ISO 5598 with GB/T 17446 equivalent to international standards (see 3.1);
 - Replace GB/T 19934.1 equivalent to ISO 10771-1 (see Chapter 9) with an equivalent international standard;
 - Replacing ISO 9110-1 (see 6.1) with JB/T 7033-2007 modified to adopt international standards;
- Removed the term "electro-modulated hydraulic directional flow control valve", added the term "electro-modulated hydraulic tee directional flow control valve" (see 3.1);
- Provides mineral oil should be consistent with GB/T 7631.2 of the L-HL (see Table 2);

--- The accuracy of the sixth chapter, the instrument allows the system error temperature error as "c) temperature. Ambient temperature $\pm 2\%$ ", revised to.

"C) Temperature. $\pm 2\%$ of actual measured value" due to the actual test temperature is more reasonable.

This section also made the following editorial changes.

--- Chapter 8, to avoid overhang paragraph, change the number of the bar, in line with national standards for writing format;

--- Figure 2, Figure 3, Figure 8, Figure 12 and Figure 13 in the symbol that does not use the original form, but with the same ISO 10770-1 Form, in conformity with the national standards for writing format;

--- Figure 14, in the graph to increase the Y1 symbol, used to indicate "amplitude ratio curve" and increase the Y2 symbol, to indicate "phase lag After the curve. "Because the original description Y1 and Y2 with the same symbol on the graphics axis, no distinction between the two curves;

--- Table 4, in the "flow rate% of the rated flow" under the heading of each table in the first line of the value of the original " ± 50 " error repair Change to " ± 5 ";

--- Deleted pressure equivalent unit "(bar)".

This part is proposed by China Machinery Industry Federation.

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

This part of the drafting unit. Haimen Oil Power Hydraulic Industry Co., Ltd., Beijing Institute of Precision Electrical and Mechanical Control Equipment, Ningbo Huayu Machine Manufacturing Co., Ltd., Zhejiang University, Yanshan University, Wuhan University of Science and Technology, Beijing Institute of Machinery Industry Automation, Shanghai Bosch Rexroth Hydraulic and Automation Co., Ltd., Shanghai Heng Extension Hydraulic Control Technology Co., Ltd., Beijing Huade Hydraulic Industrial Group Co., Ltd., Haimen Victoria Extension Hydraulic Valve Co., Ltd.

Introduction

The purpose of the development of GB/T 15623.2 is to improve the electrical modulation of the three-way direction of the flow control valve test norms, thereby enhancing the recorded Recorded test valve performance data comparability, so that these data for system design, regardless of the source of the data.

Hydraulic transmission electric modulation hydraulic control valve Part 2. Three way directional flow control valve test methods

1 Scope

GB/T 15623 provisions of this part of the electrical modulation hydraulic three-way directional flow control valve performance characteristics of the test method.

This section applies to the electro-hydraulic hydraulic system in the direction of the three-way flow control valve performance characteristics of the test.

Note: In a hydraulic system, the electro-modulated hydraulic tee directional flow control valve is capable of continuously controlling the flow and direction changes of three main valve ports by electrical signals Control valves, generally including servo valves and proportional valves and other different types of products. In the following, if not specifically defined, "valve" refers to the electric modulation hydraulic three-way directional flow Control valve.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 786.1 Fluid power systems and components - Graphical symbols and circuit diagrams - Part 1. Diagrams for general use and data processing Symbol (GB/T 786.1-2009, ISO 1219-1:2006, IDT) GB/T 3141-1994 Industrial liquid lubricants ISO viscosity classification (eqvISO 3448.1992) GB/T 4728.1 electrical diagrams with graphical symbols Part 1. General requirements (GB/T 4728.1-2005, IEC 60617data-base, IDT) GB/T 7631.2 Lubricants, industrial oils and related products (Category L) classification - Part 2 H group (hydraulic system) (GB/T 7631.2-2003, ISO 6743-4:1999, IDT) GB/T 14039 hydraulic transmission fluid solid particles pollution level code (GB/T 14039-2002, ISO 4406:1999, MOD) GB/T 17446 fluid transmission systems and components vocabulary (GB/T 17446-2012, ISO 5598:2008, IDT) GB/T 19934.1 hydraulic transmission metal pressure housing fatigue stress test - Part 1 Test methods (GB/T 19934.1-2005, ISO 10771-1:2002, IDT) JB/T 7033-2007 General principles of hydraulic transmission measurement technology (ISO 9110-1:1990, MOD)

3.1 Terms and definitions

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

3.1.1

Electro-modulated hydraulic tee directional flow control valve
electricallymodulatedhydraulicthree-portdirectional flow-controlvalve Three-way valve that responds to continuously varying electrical input signals to control continuous changes in output flow and direction.