

ICS 23.100.40

CCS J 20



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

GB/T 7939.2-2024

**Connections for hydraulic fluid power - Test methods - Part 2:
Quick-action couplings
(English Translation)**

Issued on: May 28, 2024

Implemented on: May 28, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative references	
3 Terms and Definitions	
4 Test Component Selection	
5 Test conditions	
6 Test equipment	
7 Connection force or connection torque test	
8 Breakaway force or breaking torque test	
9 Leakage test	
10 Vacuum test	
11 Air entrainment test	
12 Fluid loss test	
13 Pressure drop (Δp) test	
14 Pressure test	
15 High and low temperature test	
16 Durability test	
17 Overload tightening test of threaded quick-change connectors	
18 Explosion test	
19 Pulse pressure test (according to ISO 6803)	
20 Flexural impulse pressure test (according to ISO 6802) (only applicable to quick-change connectors in connected state)	
21 Rotational pulse pressure test (only applicable to quick-change connectors in connected state)	
22 Impact flow test (long time)	
23 Impact flow test (short time)	
24 Corrosion resistance test	
25 Test reporting and data presentation	
26 Test information to be reported	
27 Notes (reference this document)	
Appendix A (Normative) Test Data Table	
Appendix B (Normative) Characteristic test with internal pressure	

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 2 of GB/T 7939 "Test methods for hydraulic transmission connections": GB/T 7939 has been published in the following parts:

- Part 1: Pipe fittings;
- Part 2: Quick-change connectors;
- Part 3: Hose assemblies:

This document is equivalent to ISO 18869:2017 "Test methods for quick-release couplings for hydraulic transmission with or without tools":

The following minimal editorial changes were made to this document:

- In order to coordinate with the existing standards, the name of the standard is changed to "Hydraulic transmission connection test method Part 2: Quick-change connector";
- Deleted "example" in terms and definitions because the example was wrong;
- The unit of pressure "bar" has been deleted because "bar" is not a legal unit of measurement:

Introduction

In a hydraulic fluid power system, power is transmitted and controlled by pressurized fluid in a closed circuit:

Connect or disconnect fluid conduits: Quick-release fittings as defined in ISO 5598 can be connected and disconnected without the use of tools: Other types Quick-release fittings require tools for connection and disconnection:

GB/T 7939 specifies the test methods for hydraulic transmission connection elements and consists of three parts:

- Part 1: Pipe joints: The purpose is to determine the test and evaluation methods for the performance of pipe joints used in hydraulic transmission systems:
- Part 2: Quick-change connectors: The purpose is to determine the test and evaluation methods for the performance of quick-change connectors used in hydraulic transmission systems:

--- Part 3: Hose assemblies: The purpose is to determine the test and evaluation methods for the performance of hose assemblies used in hydraulic transmission systems:

Test methods for hydraulic transmission connections Part 2: Quick-change fittings

1 Scope

This document describes the test and evaluation methods for the performance of quick-change couplings used in hydraulic transmissions: This document does not apply to the Specified pipe joint testing and performance evaluation for various types of steel pipe connections, stud end connections and flange connections:

The tests described in this document are independent of each other and are the documents that each test follows: For specific test items and performance requirements, see for different applications, not all items are required to be tested: Users can select the appropriate Combined test items:

For the qualification judgment of quick-change joints, the minimum number of test samples specified in this document shall be used for testing, but in the relevant quick-change joint standards, Unless otherwise specified or agreed upon between the manufacturer and the user:

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:

ISO 48-21) Rubber, vulcanized or thermoplastic - Determination of hardness - Part 2: Rubber hardness between 10 IRHD and 100 IRHD (Rub-100IRHD) Note: GB/T 3141-1994 Industrial liquid lubricants ISO viscosity classification (eqvISO 3448:1992) ISO 3601-3 Fluid power systems-O-rings-Part 3: Quality acceptance criteria Note: GB/T 3452.2-2007 O-rings for hydraulic and pneumatic applications Part 2: Appearance quality inspection specification (ISO 3601-3:2005, IDT) Note: GB/T 8107-2012 Determination of pressure differential-flow characteristics of hydraulic valves (ISO 4411:2008, MOD) Note: GB/T 17446-2024 Fluid power systems and components vocabulary (ISO 5598:2020, MOD) ISO 6508-1 Metallic materials - Rockwell hardness test - Part 1: Test method nesstest-Part 1:Testmethod) Note: GB/T 230.1-2018 Rockwell hardness test for metallic materials Part 1: Test method (ISO 6508-1:2016, MOD) ISO 6802 Wire-reinforced rubber and plastic hoses and hose assemblies - Flexural hydraulic impulse test (Rubberandplastics Note: GB/T 14904-2011 Wire reinforced rubber and plastic hoses and hose assemblies flexural hydraulic impulse test (ISO 6802:2005, IDT)

- 1) The normative references to ISO 48 in ISO 18869:2017 have been replaced by ISO 48-2: