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

GB/T 21486-2019

Replacing GB/T 21486-2008

**Hydraulic fluid power - Filter elements - Sequence of tests for
verifying performance characteristics**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 21486-2008 "Test procedures for inspecting performance characteristics of hydraulic filter elements" and is in line with GB/T 21486-2008

The main technical changes are as follows.

--- Added test procedure for measuring flow fatigue tolerance using high viscosity oil [see 5.1.1g) and Figure 1];

--- Added "If it can be proved that this test has nothing to do with the design of the test filter element, the No. 2 filter element (see 5.2.4 for the numbering method of the filter element) can be

To omit the description of the test "[see 5.1.1h)];

--- Amended some terms in Table 1, the changes are as follows.

* The "contamination capacity" in the test project was modified to "scale capacity", "rupture resistance" was modified to "crushed (rupture) rated pressure"

"Flow fatigue characteristics" was modified to "Flow fatigue tolerance" (see Table 1, Table 1 of the.2008 edition);

* The test procedure for which the test item is "filter ratio" has been added without first structural integrity verification (see Table 1);

* The test procedure for which the test item is "Rated Axial Load" has added no compatibility test of materials and liquids (see Table 1);

* The test items are deleted from the test procedures of "compressed (ruptured) rated pressure", "rated axial load" and "flow fatigue tolerance".

Structural integrity verification (see Table 1 of the 2008 edition);

* Format adjustments (see Table 1, Table 1 of the 2008 edition).

This standard uses the translation method equivalent to ISO 11170:2013 "Test Procedures for Testing Performance Characteristics of Filters for Hydraulic Transmissions".

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this standard are as follows.

--- GB/T 14039-2002 Hydraulic transmission oil solid particle pollution level code (ISO 4406:1999, MOD);

--- GB/T 14041.1-2007 Hydraulic filter element Part 1. Verification of structural integrity and determination of initial bubble point (ISO 2942:2004, IDT);

--- GB/T 14041.2-2007 Hydraulic filter element Part 2. Test method for material and liquid compatibility (ISO 2943:1998, IDT);

--- GB/T 14041.3-2010 Hydraulic filter element Part 3. Test method for crushing resistance (ISO 2941:2009, IDT);

--- GB/T 14041.4-2019 Hydraulic transmission filter element Part 4. Test method for rated axial load (ISO 3723:2015, MOD);

--- GB/T 17446-2012 Vocabulary of fluid transmission systems and components (ISO 5598:2008, IDT);

--- GB/T 17486-2006 Evaluation of pressure drop flow characteristics of hydraulic filters (ISO 3968:2001, IDT);

--- GB/T 17488-2008 Hydraulic filter element uses particulate pollutants to determine anti-flow fatigue characteristics (ISO 3724:2007,

IDT);

--- GB/T 18853-2015 Multi-pass method for assessing the filtration performance of filter elements by hydraulic transmission filters (ISO 16889.

2008, MOD).

The following editorial changes have been made to this standard.

--- The name of the standard was changed to "Test procedure for inspecting performance characteristics of hydraulic transmission filter elements" to make it conform to the existing standards in China

rule.

This standard is proposed by China Machinery Industry Federation.

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

This standard was drafted. Xinxiang Pingfei Hydraulic Co., Ltd., Liming Hydraulic Co., Ltd., Aviation Industry (Xinxiang) Measurement Technology Co., Ltd.

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Introduction

In a hydraulic transmission system, power is transmitted and controlled by means of a pressurized liquid in a closed circuit. The liquid is both a lubricant and

It is a power transmission medium. The presence of solid particulate contaminants in hydraulic fluids will not only affect the lubrication performance of the fluid, but also cause component wear

damage. The degree of particle contamination in the oil directly affects the performance and reliability of the hydraulic system, so it needs to be controlled to allow

range.

In order to achieve the above purpose, different methods can be used, one of which is to use a filter element installed in the filter housing for filtering. Filter element

It is a porous element that performs the actual filtration process. The housing and the filter element are combined into a filter.

The performance of the filter element is measured through tests, and a series of related national standards have been formulated. In order to improve the reliability of the use of filter elements, these standards

Most of the standard test methods can be used to verify the performance characteristics of the filter element.

Inspection performance characteristics of hydraulic transmission filter

Test procedure

1 Scope

This standard specifies a test procedure for inspecting the performance characteristics of the filter element, which is used to check the hydraulic, mechanical and filter characteristics of the filter element.

This standard does not apply to the qualification verification of filter elements with special requirements or specific working conditions. To perform these verifications,

Special test procedures need to be developed, including actual use conditions (such as working fluids).

The test procedures specified in this standard are applicable to filter elements using hydraulic oil or liquids with similar chemical properties as the working medium.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 2941 Test method for crush resistance (rupture) characteristics of hydraulic transmission filter elements (Hydraulicfluidpower-Filterelemente-Verificationofcollapse/burstpressurerating)

ISO 2942 Hydraulic structural integrity verification and determination of initial bubble point (Hydraulicfluidpower-Filterelemente-Verificationoffabricationintegrityanddeterminationofthefirstbubblepoint)

ISO 2943 Test Method for Compatibility of Hydraulic Transmission Filter Material and Liquid (Hydraulicfluidpower-Filterelemente-Verificationofmaterialcompatibilitywithfluids)

ISO 3723 Test Method for Axial Load of Hydraulic Transmission Filter Elements (Hydraulicfluidpower-Filterelemente-Methodforendloadtest)