

ICS 49.080
CCS V 20



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

GB/T 46719.1-2026

**Aerospace - Hydraulic filter elements test methods - Part 1: Test
sequence**

航空航天 液压滤芯试验方法 第1部分：试验顺序

(English Translation)

Issued on: July 2, 2026

Implemented on: February 1, 2027

Issued by: State Administration for Market Regulation

Table of Contents

Preface
Introduction
1 Scope
2 Normative References
3 Terms and Definitions
4 Test Equipment and Materials
5 Accuracy of Measuring Instruments and Test Conditions
6 Test Sample
8 Test Methods
9 Data Representation
10 Acceptance criteria or data records
11 Labeling Explanation

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 46719 "Test Methods for Aerospace Hydraulic Filter Elements". GB/T 46719 has been published as follows.

Part 2.

---Part 1: Experimental Sequence;

---Part 2: Regulatory Role;

---Part 3: Filtration Efficiency and Retention Capacity;

---Part 4: Validation of Crushing/Rupture Pressure Rating;

---Part 5: Resistance to Flow Fatigue;

---Part 6: Cleanliness Levels this document is modified to adopt ISO 14085-1:2015 "Aerospace series hydraulic filter elements - Test methods - Part 1: Test sequence".

The technical differences between this document and ISO 14085-1:2015, and the reasons therefor, are as follows.

---ISO 5598 (see Chapter 3) has been replaced with the normatively referenced GB/T 17446 to adapt to my country's technical conditions;

---Added normative reference documents GB/T 46719.2~GB/T 46719.6 (see Chapters 4 and 5) to adapt to my country's technical standards.

---ISO 2942 (see Chapters 7 and 8.1) has been replaced with the normatively referenced GB/T 14041.1 to accommodate my country's technical requirements;

---ISO 3968:2001 (see Chapters 9 and 10) has been replaced by the normatively referenced GB/T 17486 and incorporated into Chapter 2, in order to conform to...

Based on my country's technological conditions.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Test Methods for Aerospace Hydraulic Filter Elements - Part 1: Test Sequence";

---Added a note explaining the meaning of "-" (see Table 1).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Aircraft Standardization Technical Committee (SAC/TC435).

Introduction

GB/T 46719 aims to provide a unified and consistent procedure for performance testing of aerospace hydraulic filter elements, and is proposed to consist of six parts.

---Part 1: Test Sequence. The purpose is to specify the test sequence and provide guidelines for acceptance criteria.

---Part 2: Regulation. This section describes the filter element's thermal conditions and cold start test procedure.

---Part 3: Filtration Efficiency and Retention Capacity. This section describes the test procedures for the filtration efficiency and retention capacity of filter cartridges.

---Part 4: Crushing/Rupture Pressure Rating Verification. The purpose is to describe the crushing (rupture) pressure test procedure for the filter element.

---Part 5: Resistance to Flow Fatigue. This section describes the test procedures for resisting flow fatigue in filter elements.

In aerospace hydraulic fluid power systems, power is transmitted and controlled through pressurized fluid. This fluid serves as both a lubricant and a...

It is the power transmission medium. The presence of solid contaminant particles in the liquid can interfere with the lubrication ability of the hydraulic oil and lead to wear and failure of components.

The degree of contamination in the fluid directly affects the system's performance, reliability, and safety, and needs to be controlled within the system's permissible level.

Filters typically consist of a filter element enclosed in a housing, which controls the contamination level of oil by removing solid contaminant particles. The filter element is...

A porous element that performs the actual filtration process. The assembly consisting of the filter element and the housing is called a filter.

The performance of filter elements is determined through testing, and a series of relevant international standards (see Chapter 2) and national standards have been established for quantification.

Filter element performance under specific conditions. To improve the reliability of filter element use, a verification test procedure needs to be developed based on these standards.

This document was developed to meet this requirement.

The purpose of this document is to specify the test sequence and provide guidelines for acceptance criteria.

Aerospace hydraulic filter element test methods Part 1: Test Sequence

1 Scope

This document specifies the test sequence for evaluating the performance of hydraulic filter elements under standard conditions.

This document is not applicable to the conformity verification of hydraulic filter elements under specific operating conditions. Only dedicated test procedures developed for this purpose can be used.

Testing procedures include actual usage conditions, such as working media or contaminants.

The test data results presented in this document are applicable to evaluating the performance of aerospace hydraulic filter elements.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

GB/T 14041.1 Hydraulic filter elements - Part 1: Verification of structural integrity and determination of initial bubble point (GB/T 14041.1-2007, ISO 2942:2004, IDT) GB/T 17446 Glossary of Fluid Transmission Systems and Components (GB/T 17446-2024, ISO 5598:2020, MOD) GB/T 17486 Evaluation of pressure drop and flow characteristics of hydraulic filters (GB/T 17486-2006, ISO 3968:2001, IDT) GB/T 46719.2 Test methods for aerospace hydraulic filter elements - Part 2: Regulation effect GB/T 46719.3 Test methods for aerospace hydraulic filter elements - Part 3: Filtration efficiency and retention capacity GB/T 46719.4 Test methods for aerospace hydraulic filter elements - Part 4: Verification of crush/rupture pressure rating GB/T 46719.5 Test methods for aerospace hydraulic filter elements - Part 5: Resistance to flow fatigue GB/T 46719.6 Test methods for aerospace hydraulic filter elements - Part 6: Cleanliness levels

3 Terms and Definitions

The terms and definitions defined in GB/T 17446 apply to this document.

4 Test equipment and materials

The testing equipment and materials are specified in the various parts of GB/T 46719.

5 Accuracy of measuring instruments and test conditions

The accuracy of measuring instruments and test conditions are described in the various parts of GB/T 46719.

6 Test Samples

The samples used for evaluation tests should be hydraulic filter elements of the same model from the same production date or batch.