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

GB/T 8243.6-2025

**Methods of test for full-flow lubricating oil filters for internal
combustion engines - Part 6: Static burst pressure test
(English Translation)**

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Foreword

This document is drafted in accordance with the provisions of GB/T 1.1-2020

Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents.

This document is Part 6 of GB/T 8243 Methods of test for full-flow lubricating oil filters for internal combustion engines. GB/T 8243 has been published in the following parts.

- Part 1.Differential pressure/flow characteristics;
- Part 2.Element by-pass valve characteristics;
- Part 3.Resistance to high differential pressure and to elevated temperature;
- Part 4.Initial particle retention efficiency, life and cumulative efficiency (gravimetric method);
- Part 5.Test for cold start simulation and hydraulic pulse durability;
- Part 6.Static burst pressure test;
- Part 7.Vibration fatigue test;
- Part 9.Inlet and outlet anti-drain valve tests;

- Part 12.Filtration efficiency using particle counting and contaminant retention capacity;
- Part 13.Static burst pressure test for composite filter housings;
- Part 14.Cold start simulation and hydraulic pulse durability for composite filter housings;
- Part 15.Vibration fatigue test for composite filter housings.

This document replaces GB/T 8243.6-2017 Methods of test for full-flow lubricating oil filters for internal combustion engines - Part 6.Static burst pressure test. Compared with GB/T 8243.6-2017, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The provision that other lubricating oil temperatures may be used in the test fluid has been added (see Chapter 5);
- b) The provisions on tightening rotation angle have been added [see 6.1.1, 6.1.8, 6.1.9, and f) and h) in Chapter 7];

Methods of test for full-flow lubricating oil filters for
internal combustion engines - Part 6.Static burst pressure
test

1 Scope

This document specifies the test method for determining the capacity of static burst pressure target value of full-flow lubricating oil filters for internal combustion engines, determining the magnitude of the static burst pressure and determining the failure mode. This document is not applicable to aviation filters and plastic filters.

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for referenced documents with dates, only the versions corresponding to the dates are applicable to this document; for referenced documents without dates, the latest versions (including all amendments) are applicable to this document.

ISO 4548-1 Methods of test for full-flow lubricating oil filters for internal combustion engines - Part 1. Differential pressure/flow characteristics

NOTE: GB/T 8243.1-2003 Methods of test for full-flow lubricating oil filters for internal combustion engines--Part 1. Differential pressure/flow characteristics (ISO 4548-1.1997, IDT)

3 Terms and definitions

For this document, the terms and definitions defined in ISO 4548-1 apply.

4 Test bench

The circuit diagram of the typical hydraulic test bench used in this document is shown in Figure 1.

The test bench shall include a manual hydraulic pump or other suitable technical device, high-pressure oil pipes, valves, a pressure gauge with a range of 0 kPa~3000 kPa or higher, and a transparent protective cover.

5 Test fluid

The lubricating oil with an ISO viscosity grade of 22 and a viscosity index (VI) of 96 at ambient temperature (or SAE 5 W lubricating oil) shall be used. Other lubricating oil temperatures may be used if agreed upon between the filter manufacturer and the customer.

6.1.1 Install the filter according to the recommended tightening torque or rotation angle.

If tolerances are specified, the minimum tightening torque or rotation angle shall be used. The connection between the filter and the connector shall be the same as the product installation condition. When multiple specimens are tested to obtain statistical average data, the mean and standard deviation should be calculated and reported. When more than seven specimens are tested, the static burst pressure estimated at a 95% confidence level can be calculated using Weibull analysis and reported.

NOTE: For Weibull analysis and assessment of static burst pressure at 95% confidence level, see ISO

19973-1.

7 Test result report

The test report shall at least include the following contents.

- a) The number of this document, i.e. GB/T 8243.6-2025;
- b) Laboratory name;
- c) Filter type (manufacturer model and batch number);
- d) Test date;
- e) Filter description. new or used (if the latter, the approximate usage time shall be indicated);
- f) Initial tightening torque or rotation angle (see 6.1.1);
- g) The target pressure value specified by the customer and whether it is achieved (see 6.1.7);
- h) Residual tightening torque or rotation angle (see 6.1.8);
- i) Visible permanent deformation (see 6.1.8);
- j) Burst pressure (see 6.2.1);
- k) Failure mode and failure location.

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