

ICS 49.050
CCS V 30



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

GB/T 45623-2025

**Reciprocating aircraft engines - Containment test method for
turbocharger rotors**

航空活塞式发动机 涡轮增压器转子包容试验方法

Issued on: May 30, 2025

Implemented on: December 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Aircraft Standardization

Technical Committee (SAC/TC435).

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Aircraft piston engine Turbocharger rotor containment test method

1 Scope

This document describes the purpose and principle of the containment test for turbocharger rotors of aircraft piston engines and specifies the pre-test preparations.

Preparation, test implementation, test data processing and criteria and test report contents.

This document applies to containment testing of turbocharger rotors for aircraft piston engines.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Rotor

Turbocharger compressor wheel or turbine wheel.

3.2 Containment

The turbocharger housing withstands high-speed impacts from rotor fragments without being penetrated.

4 Purpose of the experiment

Verify whether the turbocharger housing has sufficient strength to accommodate the high-energy rotor when the rotor fails under extreme conditions Fragments.

5 Test Principle

The high-temperature gas generated by the gas generator simulates the exhaust conditions

of the engine and drives the turbocharger to rotate at high speed until the speed reaches Above the specified minimum breaking speed, the rotor is forced to break, thus verifying whether the turbocharger housing can contain high-energy rotor fragments.

6.1 Test Outline

A test outline should be prepared before the test. The test outline should include the following contents.

- a) Test basis;
- b) Description of the turbocharger (including the configuration of the turbocharger, installation of the turbocharger on the test rig, turbocharger diagram