ICS 83.160.01
CCS G 41

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 9766.2-2024

Test method for tyre valves - Part 2: Rubber base valves test method

轮胎气门嘴试验方法 第2部分：胶座气门嘴试验方法

Issued on: September 29, 2024 **Implemented on: April 1, 2025**

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

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents. This document is Part 2 of GB/T 9766 Test Method for Tyre Valves. GB/T 9766 has issued the following parts:

---Part 1: Test Method for Clamp-in Valves;

---Part 2: Rubber Base Valves Test Method;

---Part 3: Snap-in Valves;

---Part 4: Test Methods for Tubeless Clamp-in Valves;

---Part 5: Test Methods for Large Core Chamber Tyre Valves;

---Part 6: Test Method for Core;

---Part 7: Test Methods for Components. This document serves as a replacement for GB/T 9766.2-2016 Test Method for Tyre Valves - Part 2: Rubber Base Valves Test Methods. In comparison with GB/T 9766.2-2016, apart from structural adjustments and editorial

modifications, the main technical changes are as follows:

a) The expression of Scope is modified (see Chapter 1; Chapter 1 of Version 2016);

b) The appearance inspection method is added (see Chapter 5);

c) The measurement methods for the throat diameter, taper seat position and conical hole angle of No. 1, No. 3, No. 4 and No. 5C core chambers are added (see Chapter 6);

d) The measurement methods for the pitch diameter and major diameter of external threads and the pitch diameter, minor diameter and depth of internal threads are added (see Chapter 7);

e) The test method for H08C valve core is added (see Chapter 8);

f) The distance between the sealing test valve mouth and the water surface is modified (see Chapter 8; Chapter 5 of Version 2016);

1 Scope

Part 2 of China's national test methods for tyre valves, covering rubber base valves. A tyre valve is the smallest component of a wheel assembly and one of the few whose failure deflates the tyre directly, which on a loaded truck at speed is a serious event. The rubber base type is bonded rubber to metal - a brass valve stem vulcanised into a rubber body that seals in the rim hole by its own elasticity - and the bond between those two materials is where it fails. That is why the adhesion strength between rubber and metal, and the rate of adhesive coverage, are among the properties tested here alongside the dimensional ones. The dimensional tests matter for a different reason: the valve core seats in a machined chamber and threads to a standard, and a valve whose taper seat or thread is out of tolerance leaks slowly rather than obviously. This part specifies the test equipment and apparatus, appearance inspection, the dimensional measurements of the No. 1, 3, 4 and 5C core chambers and of the external and internal threads, the sealing test, the rubber-to-metal adhesion and glue coverage tests, and the rubber seat edge thickness measurement. It applies to tube valves for trucks, industrial, agricultural and construction vehicles, motorcycles, electric bicycles and cycles, and not to aircraft tyre valves.

This document specifies the test equipment, instruments and apparatuses, appearance inspection, the measurement of throat diameter, taper seat position, and conical hole angle of No. 1, No. 3, No. 4 and No. 5C core chambers, the measurement of pitch diameter and major diameter of external threads, pitch diameter, minor diameter and depth of internal threads, sealing test, adhesion strength test between rubber and metal, determination of glue adhesion rate, and the measurement of edge thickness of rubber seat of rubber base valves (hereinafter referred to as the valves). This document is applicable to the test of tube valves for trucks, industrial vehicles, agricultural vehicles, engineering machinery, motorcycles, electric bicycles and cycles, etc. This document does not apply to the test of

aircraft tyre valves.

2 Normative References

The content of the following documents constitutes indispensable clauses of this document through normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 1796.2 Tyre Valves - Part 2: Rubber Base Valves

GB/T 1796.6 Tyre Valves - Part 6: Cores

GB/T 9766.6 Test Method for Tyre Valves - Part 6: Test Method for Core

GB/T 12839 Terms and Definitions of Tyre Valves

3 Terms and Definitions

The terms and definitions defined in GB/T 12839 are applicable to this document.

4 Test Equipment, Instruments and Apparatuses

4.1 Tensile testing machine: the load is 0 N ~ 2,000 N, and the relative change in indication value is 1%.

4.2 High-temperature test chamber: the temperature inside the chamber can reach more than 200 C, and the temperature fluctuation is 2 C.

4.3 Pressure gauge: the indication value is 0 kPa ~ 2,500 kPa, and the accuracy level is 1.6.

4.5 Special-purpose torque wrench: with an accuracy level of 5%.

4.6 Valve seating test device (see Figure 1).

4.7 Rubber thickness gauge: with a division value of

0.01 mm.

5 Appearance Inspection

Visual inspection and hand test.

6 Measurement of Throat Diameter, Taper Seat Position, and

Conical Hole Angle of No. 1, No. 3, No. 4 and No. 5C Core Chambers Use special-purpose

gauges or general measuring tools for measurement.

7 Measurement of Pitch Diameter and Major Diameter of

External Threads, Pitch Diameter, Minor Diameter and Depth of Internal Threads Use a thread go gauge to measure the pitch diameter of external threads, and the pitch diameter and depth of internal threads. Use a smooth go gauge, a smooth stop gauge or a general measuring tool to measure the minor diameter of internal threads and the major diameter of external threads.