

ICS 43.040.40

CCS T24



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

GB 16897-2022

**Structure, performance requirements and test methods of brake
hose**

制动软管的结构、性能要求及试验方法

Issued on: August 31, 2022

Implemented on: January 1, 2023

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

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9.1 Brake Hose

9.1.1 Identification strip

9.3 Brake Hose Assembly

10.3 MPa and

1 Scope

GB 16897-2022 is the Chinese national standard on structure, performance requirements and test methods of brake hose, in the field of road vehicles engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 31 August 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2023. Classification: ICS 43.040.40, CCS T24. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the structure, performance requirements, test methods and marking of brake hoses, brake hose end fittings and brake hose assemblies for automobiles, motorcycles, mopeds and trailers. This document is applicable to hydraulic, pneumatic and vacuum brake hoses, as well as brake hose end fittings and brake hose assemblies for automobiles, motorcycles, mopeds and trailers. This document is not applicable to spiral pipes for automobiles and high-temperature gas transmission rubber hoses.

1.62 MPa

0.10 MPa to the piping system. Fill it with the test medium specified in 5.3.2; exhaust all the air from the system. 5.3.5.3.2 Drive the turntable, so that it rotates at a speed of 800 r/min 10 r/min. 5.3.5.3.3 When the pressure drop of the hydraulic brake hose assembly specimen is caused by leakage, terminate the test. At this moment, record the operating time and pressure. This operating time is the flexural fatigue life.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in this 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 1690-2010 Rubber, Vulcanized or Thermoplastic - Determination of the Effect of Liquids

GB/T 7129-2001 Rubber or Plastics Hoses - Determination of Volumetric Expansion

GB/T 10125-2021 Corrosion Tests in Artificial Atmospheres - Salt Spray Tests

GB 12981-2012 Motor Vehicle Brake Fluids

GB/T 14905-2020 Rubber and Plastics Hoses - Determination of Adhesion between Components

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Brake Hose Brake hose refers to a flexible hose used in the braking system to transmit hydraulic and pneumatic energy to a brake or booster.

3.2 Brake Hose End Fitting Brake hose end fitting refers to an accessory, except the clamp, attached to the end of the brake hose for connection.

3.3 Brake Hose Assembly Brake hose assembly refers to a brake hose fitted with brake hose end fitting. NOTE. the brake hose can have armor or no armor.

3.4 Armor Armor refers to a protective device mounted on the outside of the brake hose to increase the resistance of the brake hose to scratches or impacts.

3.5 Free Length Free length refers to the straight length of the exposed brake hose between the hose end fittings when the brake hose assembly is in the vertical state.

3.6 Nominal Inside Diameter Nominal inside diameter refers to the dimensions of the inside diameter of the brake hose expressed in millimeters.

3.7 Nominal Outside Diameter Nominal outside diameter refers to the dimensions of the outside diameter of the brake hose expressed in millimeters.

4 General Requirements

4.1 The brake hose assembly used for the test shall be an unused product manufactured at

least 24 h ago. Before the test, the brake hose assembly shall be placed at 15 C ~ 32 C for at least 4 h.

4.2 The brake fluid used in the test of the hydraulic brake hose assembly shall be HZY3 or HZY4 specified in GB 12981-2012. Alternatively, other test media may also be used for the test, but they shall be indicated in the test report.

4.4 The nominal inside diameter and nominal outside diameter allow the existence of positive and negative deviations, and for ease of reference, integers can be used. Among them, hydraulic brake hoses and other rubber brake hoses are expressed by nominal inside diameters, and pneumatic brake plastic hoses and vacuum brake plastic hoses are expressed by nominal outside diameters.

5 Hydraulic Brake Hose Assembly

5.1 Structure The hydraulic brake hose assembly is composed of brake hose and brake hose end fitting, allowing accessories (for example, armor, etc.) to be included. There shall be a permanent connection between the brake hose and the brake hose end fitting, which is realized by crumpling or cold extrusion of the end fitting part to the hose.

5.2 Performance Requirements The test of the hydraulic brake hose assembly or corresponding parts shall be carried out in accordance with 5.3. The test results shall satisfy the various performance requirements specified in Table 1.

5.3.1 Inner hole passing after constriction

5.3.1.1 Requirements for gauge The structure and size of the gauge shall satisfy the requirements of Figure 1, and its mass shall satisfy the stipulations of Table 3. If without cutting the hose, the gauge is completely inserted into the hose from one end fitting
Nominal Inside

5.3.1.2 Test procedures 5.3.1.2.1 Maintain the axis of the hydraulic brake hose assembly in the vertical state. 5.3.1.2.2 Select a gauge that complies with the stipulations of 5.3.1.1. At the inlet of the upper end fitting of the hydraulic brake hose assembly, along the axis of the hydraulic brake hose assembly, vertically release the gauge; record the free fall of the gauge under its own weight. 5.3.1.2.3 The cutting may be performed at a distance of 76 mm from the end fitting on one side of the hydraulic brake hose assembly, then, at the cut end, vertically release the gauge for testing.

5.3.2 Maximum expansion quantity In accordance with the stipulations of GB/T 7129-2001, carry out the test. The test pressure is

5.3.4 Compatibility of brake fluid

5.3.4.1 Test preparation 5.3.4.1.1 Connect the hydraulic brake hose assembly specimen