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

GB/T 26653-2026

Replacing GB/T 26653-2011

Exhaust manifold castings

排气歧管铸件

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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 replaces GB/T 26653-2011 "Exhaust Manifold Cast Iron Parts". Compared with GB/T 26653-2011, the main differences are in structural adjustments and rewriting. Aside from the logical changes, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2011 edition);
- b) Added chemical composition requirements for cast steel parts (see 5.1.2);
- c) The metallographic requirements have been changed (see 5.3, 3.4 of the 2011 edition);
- d) The chemical composition test method has been changed (see 6.1,

4.1 of the.2011 edition);

e) The mechanical property testing methods have been changed (see 6.2,

4.2 of the.2011 edition);

f) The inspection rules have been changed (see Chapter 7, Chapter 5 of the.2011 edition).

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 Technical Committee on Foundry Standardization (SAC/TC54). This document was drafted by: Xixia County Internal Combustion Engine Intake and Exhaust Pipe Co., Ltd., Kehua Holdings Co., Ltd., and Anhui Yongcheng Machinery Co., Ltd. Limited Liability Company, Hefei Jianghuai Foundry Co., Ltd., Jiangsu Wanheng New Material Technology Co., Ltd., Shenyang Foundry Research Institute of China Academy of Machinery Science and Technology CRRC Qishuyan Locomotive & Rolling Stock Technology Research Institute Co., Ltd., Tianrun Industrial Technology Co., Ltd., SAIC Volkswagen Car Co., Ltd., Xixia County Zhongde Auto Parts Co., Ltd., Zhejiang Huayang Racing Car Co., Ltd., Zhejiang Sanyuan Longxing Technology Co., Ltd. The company, Chongqing Haite Automotive Exhaust System Co., Ltd., Chongqing Haite Hongye Catalyst Co., Ltd., Jiangyin Hongchuang Kinetic Energy Technology Co., Ltd. Shanxi Qianjun Intelligent Manufacturing Technology Co., Ltd., Chongqing Push New Energy Technology Co., Ltd., Hohai University, Shenyang University of Technology, Zhejiang Electromechanical Vocational College Technical University, Zhejiang Suijin Special Casting Co., Ltd., Shandong Shengtong Stainless Steel Products Co., Ltd., Airui Automotive Technology (Harbin) Co., Ltd. The company, Feilong Automotive Parts Co., Ltd., Xixia Feilong Special Casting Co., Ltd., Shandong Jinlei New Energy Heavy Equipment Co., Ltd., Taizhou City Shida Automotive Parts Co., Ltd., and Yuzhou Henglilai New Materials Co., Ltd. The main drafters of this document are. Zhao Xinwu, Cheng Jingsheng, Li Lixin, Zhang Tongxian, Yuan Yaoyao, Cong Jianchen, Yang Shuangjie, Cao Qiao, Ruan Jiangang, and Zhang Weiguang. Deng Han, Chen Kaimin, Wang Zehua, Yu Xuru, Liu Ming, Tian Shutao, Huang Hongjun, Zhang Jianxiong, Peng Yonghui, Han Yongjun, Tian Zheng, Dai Peng, Zhang Weitao, Qin Ruifeng, Feng Changhong, Wang Jinsong, Tao Yiming, Wang Liuqi, Wang Ruijin, Yang Kezhong, Tian Long, Xu Jian, Bu Xiangnan, Lei Yinhong, Wang Yufang, Bi Weixiong. This document was first published in.2011, and this is its first revision. Exhaust manifold casting

1 Scope

GB/T 26653-2026 is the Chinese national standard covering the exhaust manifold as a casting - a component thermally cycled between ambient and red heat thousands of times, where the requirement is resistance to oxidation, to growth and to thermal fatigue rather than to load. It replaces GB/T 26653-2011 and has been in force since 1 September 2026, with the heat resistant iron standard GB/T 9437-2026. It was issued on 27 February 2026

and has been in force since 1 September 2026, replacing GB/T 26653-2011. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the selection principles and technical requirements for the grade of exhaust manifold castings for internal combustion engines (hereinafter referred to as "castings"), and describes the corresponding... The test methods specify the inspection rules and requirements for labeling, quality certificates, packaging, storage, and transportation. This document applies to the manufacture of exhaust manifold castings for internal combustion engines.

4.Principles for selecting grades Depending on the operating temperature, exhaust manifold castings can be made of gray cast iron, ductile cast iron, vermicular graphite cast iron, or cast steel. For specific selection, please refer to Appendix A.

5.1 Chemical composition

5.1.1 The chemical composition of cast iron parts of grades HT200, HT250, RuT300, QT400-15, QT400-18, and QT450-10 shall not be used for acceptance. According to the regulations, the chemical composition of other grades of cast iron parts should conform to the provisions of Table 1.

5.1.2 The chemical composition of cast steel parts shall conform to the provisions of Table 2.

5.2 Mechanical Properties The mechanical properties of the castings shall conform to the specifications in Table 3.

5.3 Metallographic Structure

5.3.1 The metallographic structure of cast iron parts shall conform to the specifications in Table

4.When there are special requirements, the purchaser shall specify them in the product drawings or supply contract. The metallographic structure of cast steel parts shall not be used as a basis for acceptance.

5.3.2 Castings may be supplied in the as-cast condition. Heat treatment is permitted to achieve the required mechanical properties and metallographic structure.

5.4 Geometric shape and dimensional tolerances The geometry and dimensions of castings shall conform to the specifications in the drawings or relevant technical requirements. Unless otherwise specified, the dimensional tolerances of castings shall be... The grade should meet the requirements of DCTG8 in GB/T 42124.3-2025, and the

geometric tolerance grade should conform to GB/T 42124.3-2025. According to the GCTG6 standard, misalignment should not affect processing or installation, and the wall thickness after misalignment should not be less than the minimum allowable wall thickness.

5.5 Surface Quality

5.5.1 Castings shall be thoroughly cleaned. The removal of gating and riser residues, scale, burrs, etc., shall conform to the drawings or the order between the supplier and the buyer. agreement.

5.5.2 The surface roughness of the inner and outer surfaces of the casting shall be determined according to the requirements of the buyer's drawings. If the drawings do not specify, the roughness shall be selected in accordance with the provisions of GB/T 6060.1.

5.5.3 Castings shall be shot blasted to remove adhering sand, oxide scale, etc.

5.6 Internal Quality

5.6.1 Casting defects are not allowed in castings. Casting defects that are not allowed in castings include.

- a) Castings shall not have casting defects (such as cracks, cold shuts, shrinkage cavities, inclusions, etc.) that affect the performance of the casting.
- b) The inner cavity of the casting shall not have burrs, scales, or other casting defects that affect the venting state.
- c) No casting defects of any size are allowed to be present simultaneously on the same part of the inner and outer surfaces of the casting pipe wall.

5.6.2 Permissible casting defects in castings Without affecting performance, the following casting defects are permissible in castings.

- a) Casting defects less than one-fifth of the total depth of the bolt holes are permitted at the bolt hole location of the casting, and the casting defect should be within a certain distance from the end face of the threaded hole. The thread pitch should be no less than 3, and the defect should not affect the installation or the strength after installation.
- b) Slight shrinkage porosity is permissible at hot spots in castings. The shrinkage porosity should not exceed one-fifth of the cross-section of the affected area, and the distance from the affected area to... The thickness of the inner wall is not less than the thickness of the pipe wall, and it does not affect machining, nor reduce the strength and installation performance of the casting.
- c) Castings are permitted to contain casting defects that can be removed by machining.
- d) The types, quantities, and ranges of permissible casting defects on non-machined surfaces and inside castings shall conform to the requirements of the buyer's drawings and