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

GB/T 20910-2025

Replacing GB/T 20910-2007

**Temperature and pressure safety valves for hot water supply
systems**

热水系统用温度压力安全阀

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Table of Contents

1	Scope
2	Normative references
3	Terms and Definitions
4	Table
4.1	Parameter
4.2	Structure
4.3	Valve Body
4.4	Valve seat and valve disc
4.5	Springs
4.6	Temperature Sensing Element
4.7	Anti-loosening device
4.8	Pressure relief performance
4.9	Temperature Release Performance
4.10	Rated Displacement
4.11	Mechanical Properties
4.12	Shell strength
4.13	Sealing performance
4.14	Materials
5	Inspection Items (8)
5.1	Shell Strength Test
5.2	Set pressure and reseating pressure test
5.3	Sealing Test
5.4	Pressure Relief Duration Test
5.5	Set temperature and reseating temperature test
5.6	Temperature Release Duration Test
5.7	Temperature Release Displacement Test
5.8	Pressure Relief Displacement Test
5.9	Mechanical property test
6	Table
6.1	Inspection Items
6.2	Factory Inspection
6.3	Type Testing

8 Packaging, transportation and storage

9 Installation and Maintenance

1 Scope

GB/T 20910-2025 is the Chinese national standard covering the T and P relief valve on a water heater - the set pressure and the temperature at which it opens regardless of pressure, the discharge capacity, and the endurance in water full of scale, because this valve is the last thing between a heater and an explosion. Issued on 31 October 2025, it has been in force since 1 May 2026, replacing GB/T 20910-2007.

This document specifies the technical requirements, test methods, inspection rules, marking, installation, and maintenance of temperature and pressure safety valves for hot water systems, as well as their packaging. Loading and storage. This document applies to nominal sizes DN15~DN50, flow channel diameters not less than 11.1mm, and set pressure ranges from 0.1MPa~ 1.1MPa pressure, set temperature not exceeding 99°C for solar water heaters, electric water heaters, heat pump water heaters, gas water heaters, oil-fired water heaters, etc. Temperature and pressure safety valves for pressurized hot water systems.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 1047 Definition and selection of nominal dimensions for piping components

GB/T 7306 (all parts) 55° Sealing Pipe Thread

GB/T 12225 Technical Requirements for Copper Alloy Castings for General Valves

GB/T 12230 Technical Requirements for Stainless Steel Castings for General Valves

GB/T 12243 Spring-loaded safety valve

GB/T 23935 Design Calculation of Cylindrical Helical Springs

GB/T 29528 Technical conditions for copper alloy forgings for valves

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Temperature/pressure safety valve An automatic valve that opens its valve disc without any external force, relying solely on the pressure of the medium or the force generated by the thermal expansion of a temperature-sensing element. The valve opens to discharge a predetermined amount of fluid to prevent pressure and temperature from exceeding predetermined safety values; once pressure and temperature return to normal, the valve closes. And prevent the medium from continuing to flow out.

3.2 Set temperature The temperature and pressure safety valve is set to open at the inlet medium temperature.

3.3 reseating temperature The temperature of the inlet medium when the valve disc re-contacts the valve seat after the temperature and pressure safety valve has discharged.

3.4 Set pressure The temperature and pressure safety valve is set to open at the inlet medium pressure.

5 Inspection Items (8)

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 20910-2007 "Temperature and Pressure Safety Valves for Hot Water Systems". Compared with GB/T 20910-2007, it has the following differences. Aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The terminology and definition of "temperature and pressure safety valve" have been changed (see 3.1,.2007 edition of 3.1);
- b) The term and definition of "temperature sensing element" have been added (see 3.7);
- c) The description of "valve seat and valve disc" has been changed (see 4.4,.2007 version 4.4);
- d) Changed "Assembly" to "Anti-loosening setting" (see 4.7,.2007 version 4.7);
- e) Added setting pressure segments and changed the requirements for setting pressure deviation (see Table 2 in 4.8.3, 4.8.3 in the.2007 version);
- f) The material requirements have been changed (see 4.14,.2007 edition of 4.14);
- g) The pressure range requirements for temperature release displacement tests have been changed (see 5.7,.2007 edition of 5.7);
- h) The requirements for the inspection rules have been changed (see Chapter 6, Chapter 6 of the.2007 edition);

i) Added packaging, transportation and storage (see Chapter 8). 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 by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Safety Relief Devices (SAC/TC503). This document was drafted by: Zhejiang Aimoying Intelligent Technology Co., Ltd., Hefei General Electromechanical Products Testing Institute Co., Ltd., and Anhui Provincial Special Equipment Testing Center. Equipment Association, China Shipbuilding Group Corporation 719 Research Institute, Tianzheng Valve Co., Ltd., Zhejiang Huayi Precision Machinery Co., Ltd. Zhejiang Fuyu Valve Manufacturing Co., Ltd., Zhongbai Valve Co., Ltd., and Lite Valve Technology Co., Ltd. The main drafters of this document are. Chen Xuefeng, Li Dangkai, Feng Yulin, Hu Weizu, Hou Yingzhe, Zhang Junce, Yao Haifeng, Luo Guoyan, and Chi Yuefu. Xie Zhengben. This document was first published in 2007, and this is its first revision. Temperature and pressure safety valve for hot water system

9 Installation and Maintenance

1. Schematic diagram of the structure of a temperature and pressure safety valve. Figure
2. Schematic diagram of the recommended test setup for pressure and temperature setting tests.