



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

GB/T 37499-2019

**Safety and control devices for gas burners and gas-burning
appliances - Particular requirements - Automatic and
semi-automatic valves**

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1 Scope

This Standard specifies the terms and definitions, classification and grouping, structure and materials, requirements, test methods, inspection rules, marking, installation and operation instructions, packaging, transportation and storage of automatic and semi-automatic valves (hereinafter referred to as valves) for burners and appliances using urban gas as specified in

GB/T 13611.

This Standard applies to normally closed valves with a maximum inlet pressure not exceeding 500 kPa, used in gas-burning appliances or burners such as gas water heaters, gas heating boilers, gas burners/machines, gas heaters, gas steam ovens, and gas-fired boilers, and operated directly or indirectly by electromagnetic, electric, or mechanical means.

This Standard does not apply to valves specified in CJ/T 132.

2 Normative References

The following documents are essential to the application of this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 2828.1 Sampling procedures for inspection by attributes - Part 1. Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (GB/T 2828.1-2012,

ISO 2859-1.1999, IDT)

GB 3836.4 Explosive atmospheres - Part 4. Equipment protection by intrinsic safety "i" (GB 3836.4-2010, IEC 60079-11.2006, MOD)

GB/T 13611 Classification and basic characteristics of city gas

GB/T 14536.1-2008 Automatic electrical controls for household and similar use - Part 1.

General requirements [IEC 60730-1.2003 (Ed3.1), IDT]

GB/T 30597-2014 General requirements of safety and control devices for gas burners and gas-burning appliances (ISO 23550.2011, MOD)

IEC 60730-1.2016 Automatic electrical controls - Part 1. General requirements

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 30597 and the following apply.

3.1 Automatic shut-off valve

A valve that opens when power is supplied and automatically closes when power is depleted, and has a safety shut-off function.

3.2 Semi-automatic shut-off valve

A valve that can be manually opened and automatically closed when power is depleted, and also has a safety shut-off function.

3.3 Thermoelectric valve

An automatic shut-off valve that is directly driven by thermoelectric potential energy.

3.4 Valve with step control

A valve that controls flow in steps.

3.5 Valve with modulating control

A valve that continuously controls the flow rate between two flow rate setpoints based on an external signal.

3.6 Actuating mechanism

The component in a valve that moves the closing element.

3.7 Actuating pressure

The pressure that drives the valve actuator to perform its actions.

3.8 Control valve

A valve that controls the pneumatic or hydraulic supply to the actuating mechanism.

3.9 Actuator

to flow.

3.19 C/I valve

Automatic or semi-automatic shut-off valves with special performance requirements in

terms of materials, airtightness, and durability.

4.1 Classification

In addition to complying with the provisions of 4.1 in GB/T 30597-2014, valve classification shall also meet the following requirements.

a) Classification by sealing force.

--- Class A, B, and C valves. Valves whose sealing forces do not decrease with changes in gas inlet pressure and can be safely closed; they are classified into Class A, B, and C according to the sealing force requirements specified in 6.3.5.7 a).

--- Class D valves. Valves without sealing force requirements.

--- Class J valves. Valves whose sealing forces do not decrease with changes in gas inlet pressure, can be safely closed; and meet the requirements of 6.3.5.7 b).

b) Classification by function.

--- C/I valves;

--- Automatic shut-off valves;

--- Semi-automatic shut-off valves;

--- Valves with modulating control;

--- Valves with step control.

4.2 Grouping

Valve grouping shall comply with the provisions of 4.2 in GB/T 30597-2014.

5.1 General requirements

The general structure of the valve shall conform to the provisions of 5.1 in GB/T 30597-2014.

5.2.1 Appearance

The appearance of the valve shall conform to the provisions of 5.2.1 in GB/T 30597-2014.

5.2.2 Orifice

The orifice of the valve shall conform to the provisions of 5.2.2 in GB/T 30597-2014.

5.2.3 Breathing hole

The valve's breathing hole shall conform to the provisions of 5.2.3 in GB/T 30597-2014.