GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 23.060.10
J 16

GB/T 15185-2016

Partly replacing GB/T 15185-1994

Flanged Iron and Copper Ball Valves

法兰连接铁制和铜制球阀

Issued on: August 29, 2016 **Implemented on: March 1, 2017**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of the People's Republic of China.

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 15185-1994, *Cast Iron and Copper Alloy Ball Valves*. This Standard replaces the flanged ball valves part of GB/T 15185-1994; GB/T 8464-2008 replaces the threaded ball valves part of GB/T 15185-1994. Compared with GB/T 15185-1994, the major technical differences of this Standard are as follows:

-- it modifies the standard name (see cover and page 1; cover and page 1 of edition 1994);

-- it modifies the scope of nominal dimensions (Article 1; Article 1 of edition 1994);

-- it adds the correlation between pressure and temperature (see Article 1);

-- it modifies Figure 1 and Figure 2 (see Article 4; Article 4 of edition 1994);

-- it deletes the diagrams of the structures of ball valve body (5.2 of edition 1884);

-- it adds the measurement of valve body wall thickness (6.2.3);

-- it adds the mechanical property test (see 6.2.5);

-- it deletes the requirements for fire resistance (5.7 of edition 1994);

-- it deletes the requirements for cleanliness (5.8 of edition 1994).

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of the National Standardization Technical Committee on Valves (SAC/TC 188).

The responsible drafting organizations of this Standard: Hefei Tongyong Environmental Control Technology Co., Ltd., Taizhou Special Equipment Supervision and Inspection Center, Zhejiang Yongyuan Valve Co., Ltd.,

The contributory drafting organizations of this Standard: Zhejiang Dunan Valve Co., Ltd., Zhejiang Wandekai Copper Industry Co., Ltd., Zhejiang Electromechanical Products Quality Testing Institute, Henan Gaoshan Valves Co., Ltd., Anhui Fangxing Industry (Group) Co., Ltd., Ningbo Amico Copper Valves Manufacturing Inc.

The main drafters of this Standard: Song Zhongrong, Li Longjun, Li Haiping, Zhu Xinyan, Zha Zhao, Shen Yunbiao, Yang Quanqing, Jiang Jianqian, Zheng Xuezhen.

The edition of the standard replaced by this Standard is as follows:

-- GB/T 15185-1994.

Flanged Iron and Copper Ball Valves

1 Application Scope

This Standard specifies the structures, technical requirements, test methods, inspection rules and marking, packaging and storage of flanged iron and copper ball valves.

This Standard applies to flanged iron and copper ball valves.

The parameters of applicable valves include: grey cast iron ball valves of nominal dimension DN50 ~ DN300, working temperature -10°C ~ 200°C and nominal pressure not greater than PN10; grey cast iron ball valves of working temperature -10°C ~ 100°C and nominal pressure not greater than PN16; spheroidal graphite cast iron ball valves of working temperature -10°C ~ 300°C and nominal pressure not greater than PN25; copper alloy ball valves of working temperature -40°C ~ 180°C and nominal pressure not greater than PN25.

The working media include water, non-corrosive liquid, gas and saturated steam and so on.

For ball valves of other connections, this Standard can also be used as reference.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition dated applies to this document. For undated references, the latest edition of the referenced documents (including all amendments) applies to this Standard.

GB/T 228.1, *Metallic Materials – Tensile Testing – Part 1: Method for Test at Room Temperature*

GB/T 12220, *Industrial Valves – Marking*

GB/T 12221, *Metal Valves – Face to Face, End to End, Center to Face and Center to End Dimensions*

GB/T 12223, *Part-turn Valve Actuator Attachments*

GB/T 12225, *General Purpose Industrial Valves - Specification of Copper Alloy Castings*

GB/T 12226, *General Purpose Industrial Valve – Specification of Flake Graphite Iron Castings*

GB/T 12227, *General Purpose Industrial Valve – Specification of Spheroidal Graphite Iron Castings*

GB/T 13927, *Industrial Valves – Pressure Testing*

GB/T 15530.1, *Cast Copper Alloy Integral Flanges*

GB/T 15530.8, *Specifications for Copper Alloy and Composite Flanges*

GB/T 17241.6, *Integral Cast Iron Pipe Flanges*

GB/T 17241.7, *Specifications for Cast Iron Pipe Flanges*

GB 26640, *Specification for Minimal Thickness of the Shell of Valves*

JB/T 5300, *General Purpose Industrial Valves Material – Selection Guideline*

JB/T 7928, *Industrial Valves – Delivery Specification*

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 anti-static device

a structure which ensures the conductivity between valve body, valve ball and valve stem

4 Structures

The structures of ball valves can be classified into float ball valves and fixed ball valves. The typical structures are as shown in Figure 1 and Figure 2.

6 Test Methods and Inspection Rules

6.1 If no other additional inspection requirements in the ordering contract, the inspection content of the purchaser is as follows:

a) inspection of valves during assembly using nondestructive test method;

b) examination of “manufacturing records”, “heat treatment records” and so on;

c) pressure test.

6.2 Test methods

6.2.1 Shell test

The test for the shell of ball valves shall be as specified in GB/T 13927.

6.2.2 Sealing test

Sealing test shall be as specified in GB/T 13927.

6.2.3 Valve body wall thickness measurement

Use thickness gauge or special calipers to measure the wall thickness of valve body.

6.2.4 Material chemical composition analysis

Drill on valve body to obtain cuttings for analysis or use direct-reading spectrum analyzer for analysis.

6.2.5 Mechanical property

Use test bars of the same furnace number and the same batch for heat treatment as that of valve body, or use test bars cast along with valve body, as specified in GB/T 228.1.

6.2.6 Anti-static test

For ball valves required to have anti-static structure, anti-static test shall be carried out as specified in 5.8.

6.2.7 Valve body marking inspection

Carry out visual inspection for the cast or printed marking content on the surface of valve body.

6.3 Inspection rules

6.3.1 Inspection items

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