# GB

NATIONAL STANDARD OF

THE PEOPLE'S REPUBLIC OF CHINA

ICS 47.020.30

U 52

# GB/T 589-2015

Replacing GB/T 589-1993

# Marine bronze flanged check valve



**Issued on: July 3, 2015** **Implemented on: October 1, 2015**

**Issued by: General Administration of Quality Supervision, Inspection and Quarantine;**

**Standardization Administration Committee.**

# Table of Contents

# Foreword

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

This Standard replaces GB/T 589-1993 *Marine bronze flanged check valves*. Compared with GB/T 589-1993, the main technical modifications are as follows:

- modified marking method;
- modified processing requirements.

This Standard was proposed by China Shipbuilding Industry Corporation.

This Standard shall be under the jurisdiction of National Technical Committee on Marine Machinery of Standardization Administration of China (SAC/TC 137).

The drafting organizations of this Standard: Dalian Shipbuilding Heavy Industry Group Co., Ltd., Dalian Golden Valve Co., Ltd.

Main drafters of this Standard: Li Jing, Liu Xiaopeng, Ma Yulong, Liu Jian, Zhang Hezhi, Yu Changpeng.

Versions of standard substituted by this Standard are:

- GB 589-1965, GB 589-1976, GB 589-1984, GB/T 589-1993.

# Marine bronze flanged check valve

## 1 Scope

This Standard specifies the classification and marking, requirements, test methods, inspection rules, packaging and storage for marine bronzel flanged check valve of flange connection size and sealing surface according to GB/T 4196, GB/T 2501 (hereinafter referred to as check valve).

This Standard is applicable to the design, manufacture and acceptance of check valve for steam piping system of which the mediums are fresh water, seawater, lubricating oil, fuel and temperature does not exceed 250°C.

## 2 Normative references

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

GB/T 600-2008, *General specifications for marine piping valves and fittings*

GB/T 1176-2013, *Casting Copper and Copper Alloys*

GB/T 1184-1996, *Geometrical tolerancing--Geometrical tolerance for features without individual tolerance indications*

GB/T 1804-2000, *General Tolerances - Tolerances for Linear and Angular Dimensions without Individual Tolerance Indications*

GB/T 1958, *Geometrical product Specifications (GPS) - Geometrical tolerance - Verification prescription*

GB/T 2501, *Connection dimensions and mating face of marine flanges*

GB/T 3032, *Marks for Marine Piping Valves and Fittings*

GB/T 11698, *Metal valves for use in marine flanged pipe systems - Face-to-face and center-to-face dimensions*

GB/T 3927, *Direct-current potentiometers*

CB/T 4196, *Marine pipe flanges-connection dimensions and mating face*

reference with furnace number. The shelf life shall not be less than 3 a.

### 4.3 Strength

The check valve body strength, at 1.5 times design pressure of hydraulic pressure, shall have no leakage.

### 4.4 Sealability

The check valve is in the reverse state. There shall be no leakage between valve plate and valve seat when the sealing surface is reduced from 1.1 times the design pressure to 0.3 MPa.

### 4.5 Dimensional tolerance

**4.5.1** The wall thickness of check valve shall comply with the requirements of CB/T 3927; the wall thickness tolerance shall meet requirements of 3.4 in GB/T 600-2008.

**4.5.2** The unnoted linear dimensional tolerance of check valve shall meet requirements of grade m in GB/T 1804-2000.

**4.5.3** The structural length tolerance of check valve shall meet requirements of GB/T 11698.

### 4.6 Geometric tolerance

The geometric tolerance of check valve shall meet requirements of grade H in GB/T 1184-1996.

### 4.7 Appearance

The check valve appearance shall meet requirements of 3.10 in GB/T 600-2008.

### 4.8 Mass

See Table 2, Table 3 for check valve mass. The positive deviation of its mass shall not exceed 4% of the theoretical mass.

### 4.9 Mark

The mark for check valve shall meet requirements of GB/T 3032.

## 5 Test methods

### 5.1 Materials

The chemical composition and mechanical properties of castings shall be carried out according to the method specified in GB/T 1176-2013. Other materials shall be inspected by means of inspection material designation and material quality certificate. The results shall meet requirements of 4.1.

### 5.2 Strength

The strength test method of check valve shall be carried out according to the provisions of 4.12.3 in GB/T 600-2008. The results shall meet requirements of 4.3.

### 5.3 Sealability

The sealability test method for check valve plate and seat shall be carried out according to the method specified in 4.13.3 of GB/T 600-2008. The results shall meet requirements of 4.4.

### 5.4 Size and dimensional tolerance

**5.4.1** The wall thickness tolerance of check valve shall be measured by thickness gauge, caliper or ruler. The results shall meet requirements of 3.3 and 4.5.1.

**5.4.2** The check valve size and linear dimension tolerance shall be measured by corresponding level of measuring tool. The results shall meet requirements of 3.3 and 4.5.2.

**5.4.3** The structural length tolerance of check valve shall be measured by steel ruler or vernier caliper. The results shall meet requirements of 3.3 and 4.5.3.

### 5.5 Geometric tolerance

The geometric tolerance of check valve shall be measured according to the provisions of GB/T 1958. The results shall meet requirements of 4.6.

### 5.6 Appearance

Use visual inspection to check the check valve's appearance. The results shall meet requirements of 4.7.

### 5.7 Mass

Place the check valve on a weighing instrument of which the scale value is not more than 0.01 kg. The results shall meet requirements of 4.8.

### 5.8 Mark

Use visual inspection to check the check valve's mark. The results shall meet

**This is an excerpt of the PDF (Some pages are marked off intentionally)**



**------ The End ------**