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GB/T 592-2015

Replacing GB/T 592-1993

Marine Cast Iron Flanged Check Valves

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Table of Contents

Foreword.....	3
1 Application Scope.....	4
2 Normative References.....	4
3 Classification and Designation	5
4 Requirements.....	8
5 Test Methods.....	9
6 Inspection Rules.....	10
7 Packaging and Storage	11

Foreword

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

This Standard replaces GB/T 592-1993, *Marine Cast Iron Flanged Lift Check Valves*. Compared with GB/T 592-1993, the major changes in technical content are as follows:

- it cancels the use of cast iron stop valves in steam piping system;
- it modifies the way of designation;
- it modifies the processing requirements in accordance with GB/T 600.

This Standard was proposed by China Shipbuilding Industry Corporation.

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

The drafting organizations of this Standard: Dalian Shipbuilding Industry Co., Ltd., Dalian Jinmei Valve Co., Ltd.

The main drafters of this Standard: Xi Chunqing, Ma Yulong, Liu Xiaopeng, Wei Yanchun, Zhang Hezhi, Yu Changkun.

The previous editions of the standard replaced by this Standard are as follows:

- GB 592-1965, GB 592-1976, GB 592-1984, GB/T 592-1993.

Marine Cast Iron Flanged Check Valves

1 Application Scope

This Standard specifies the classification and designation, requirements, test methods, inspection rules, packaging and storage of marine cast iron flanged check valves; their flange connection dimensions and mating face are as specified in CB/T 4196 and GB/T 2501.

This Standard applies to the design, manufacture and acceptance of check valves for piping systems whose medium is sea water, fresh water, lubricating oil or fuel oil.

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 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 9439-2010, *Grey Iron Castings*

GB/T 11698, *Metal Valves for Use in Marine Flanged Pipe Systems – Face-to-face and Center-to-face Dimensions*

CB/T 3927, *Wall Thickness of Casting Body for Marine Valve*

CB/T 4196, *Marine Pipe Flanges – Connection Dimensions and Mating Face*

4.6 Appearance

The appearance of check valves shall be as specified in GB/T 600-2008, 3.10.

4.7 Mass

See Table 2 and Table 3 for the masses of check valves; their positive deviation shall not exceed 4% of design mass.

4.8 Marking

The marking of check valves shall be as specified in GB/T 3032.

5 Test Methods

5.1 Material

The test methods for chemical composition and mechanical properties for the castings of check valves are specified in GB/T 1176-2013 and GB/T 9439-2010; other materials are inspected by inspecting the material designation and material quality certificate. The results shall be as specified in 4.1.

5.2 Strength

The method for the strength test of check valves is as specified in GB/T 600-2008, 4.12.3. The results shall be as specified in 4.2.

5.3 Air-tightness

The method for the air-tightness test of the valve disk and valve seat of check valves is specified in GB/T 600-2008, 4.13.3. The results shall be as specified in 4.3.

5.4 Dimensional tolerances

The linear dimensional tolerances of check valves shall be inspected with a measuring tool of an appropriate grade. The results shall be as specified in 3.3 and 3.4.

5.5 Geometric tolerances

The geometric tolerances of check valves shall be inspected as specified in GB/T 1958. The results shall be as specified in 4.5.

5.6 Appearance

The appearance of check valves is inspected by visual inspection. The results shall be as specified in 4.6.

5.7 Mass

7	Mass	•	-	4.7	5.7
8	Marking	•	•	4.8	5.8
NOTE • a required item; - a non-inspection item.					

6.2.3 Quantity of samples for inspection

The quantity of samples for the type inspection of check valves shall be 3.

6.2.4 Evaluation criteria

If all samples of check valves pass all inspection items, then the type inspection is decided to be a pass. In case there is any check valve whose materials are not as specified, then the type inspection is decided to be a fail; in case of any item which is not as specified, a reinspection shall be performed by doubling samples; if the reinspection is a pass, then the type inspection of check valves is decided to be a pass; if there is still any unsatisfactory item in the reinspection, the type inspection of check valves is decided to be a fail.

6.3 Exit-factory inspection

6.3.1 Inspection items

See Table 5 for the exit-factory inspection items and sequence of check valves.

6.3.2 Quantity of test samples

Except that materials are tested in accordance with the batch grouping specifications (one batch consisting of materials of the same furnace number), other inspections shall be performed on products one by one.

6.3.3 Evaluation criteria

If all samples of check valves pass all inspection items, then the exit-factory inspection is decided to be a pass. In case there is any check valve whose materials are not as specified, then the exit-factory inspection is decided to be a fail; in case of any check valve which is not as specified, a reinspection is allowed after rework is done. if the reinspection is a pass, then the exit-factory inspection of check valves is decided to be a pass; if there is still any unsatisfactory item in the reinspection, the exit-factory inspection of check valves is decided to be a fail.

7 Packaging and Storage

The packaging and storage of check valves are specified in GB/T 600-2008, Article 6.

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