

## Shipbuilding – Hull cast steel globe valves

**1. Scope** This Japanese Industrial Standard specifies marine hull cast steel globe valves (hereinafter referred to as "globe valve") intended for the services on sea water and bilge pipelines, and to be fitted on ship's bottom or side.

**Remark:** This standard makes reference to the following standards:

- JIS B 0205 – Metric coarse screw threads
- JIS B 0222 – 29°C trapezoidal screw threads
- JIS B 2210 – Basic dimensions of ferrous materials pipe flanges
- JIS F 7102 – Shipbuilding – Piping system in machinery space – Application for gaskets and packings
- JIS F 7400 – Shipbuilding – Valves and cocks – General inspection requirement
- JIS G 3101 – Rolled steel for general structure
- JIS G 4303 – Stainless steel bars
- JIS G 4305 – Cold rolled stainless steel plates, sheets and strip
- JIS G 4404 – Alloy tool steels
- JIS G 5101 – Carbon steel castings
- JIS G 5121 – Stainless steel castings
- JIS G 5501 – Gray iron castings
- JIS H 3100 – Copper and copper alloy sheets, plates and strip
- JIS H 3250 – Copper and copper alloy rods and bars
- JIS H 3260 – Copper and copper alloy wires
- JIS H 5111 – Bronze castings

**2. Pressure rating** The relation between fluid condition and maximum working pressure for the globe valves shall be as given in **Table 1**.

**Table 1**

| Fluid condition     | Maximum working pressure MPa |         |                       |         |
|---------------------|------------------------------|---------|-----------------------|---------|
|                     | Nominal dia. 200 or less     |         | Nominal dia. 250, 300 |         |
|                     | Class B                      | Class S | Class B               | Class S |
| Sea water and bilge | 1.0                          |         | 0.7                   | 1.0     |

**Remark:** For Class B and Class S, refer to 4. (1).

**3. Construction, shape and dimensions** The construction, shape and dimensions shall be as shown in **Fig. 1**.

1. The permissible deviation of body thickness "a" shall, as a rule, be within  $\begin{matrix} +15 \\ -10 \end{matrix}$  %, but when the calculated value is below 1 mm, the permissible deviation may be 1 mm.

**4. Materials** The materials shall be as follows:

(1) The body, bonnet, and principal parts (disc, valve seat and stem) shall be as shown in **Fig. 2**.

The globe valves shall be classified into Class B and Class S depending on the combination of materials. However for the valves in Class S, either of the following directions may be followed.

- (a) For the globe valves of nominal diameter 200 or more, the disc and valve seat shall be **JIS G 5101 – SC 480**. In this case, the seating face of the valve shall be deposited with austenitic stainless steel.
- (b) For the globe valves of nominal diameter 200 or more having valve seat integral with the valve seat, the seating face of the valve seat shall be directly deposited with austenitic stainless steel.

(2) The materials used for other parts shall, as a rule, be as shown in the Fig. 2.

**5. Tests and inspection** The globe valves shall be subjected to the following items of inspection in accordance with the requirements as specified in JIS F 7400.

- (1) Material inspection
- (2) Visual inspection
- (3) Dimensional inspection
- (4) Assembly inspection
- (5) Hydraulic inspection

The globe valves shall be tested with test pressure as given in Table 2.

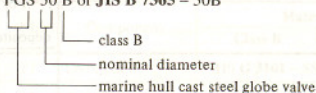
Table 2

| Nominal diameter | Test pressure MPa                        |         |                               |         |
|------------------|------------------------------------------|---------|-------------------------------|---------|
|                  | Watertightness inspection for valve seat |         | Hydraulic inspection for body |         |
|                  | Class B                                  | Class S | Class B                       | Class S |
| 200 or less      | 1.1                                      |         | 1.5                           |         |
| 250, 300         | 0.77                                     | 1.1     | 1.05                          | 1.5     |

**6. Designation** The globe valves shall be designated by the title, nominal diameter and material classification or symbol. JIS number may be used in place of the title.

**Example:** For a globe valve of Class B and nominal diameter 50:

Marine hull cast steel 50 globe valve B or FGS 50 B or JIS B 7365 – 50B



**7. Marking** The following particulars shall be marked by casting or die stamps on the body.

- (1) Maximum working pressure and nominal diameter

**Example:** 10 K – 50

- (2) Arrowhead indicating the direction of flow
- (3) Manufacturer's name or mark
- (4) Year and month of manufacture

#### Related Standard:

ISO 5208 – Industrial valves – Pressure testing for valves