

Shipbuilding – Cast steel 10 K screw-down check globe valves

1. Scope This Japanese Industrial Standard specifies cast steel 10 K screw-down check globe valves (hereinafter referred to as “globe valve”) used for steam, fresh water, feed water, fuel oil lines and lubricating oil lines in ships.

Remark: This standard makes reference to the following standards:

JIS B 0205 – Metric coarse screw threads

JIS B 0222 – 29° 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 5101 – Carbon steel castings

JIS G 5121 – Stainless steel castings

JIS G 5501 – Gray iron casting

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 shall be as given in Table 1.

Table 1

Fluid condition	Maximum working pressure MPa
Steam of 300 °C	1.0
Steam of 220 °C or less	1.2
Air, gas, oil and pulsation water	
Non-shock water of 120 °C or less	1.4

Remarks:

- When temperature or pressure is between the values of the table, the working pressure may be determined by interpolation.
- When BC6 is used for the guide, the fluid condition shall be 205°C or less.

3. Classification The globe valves shall be classified as given in Table 2 in according with the guiding methods of the disc.

Table 2

Class	Nominal dia.	Symbol
Stem-guide type	50 ~ 200	—
Piston-guide type	150, 200	P

4. Construction, shape and dimensions The construction, shape and dimensions shall be as shown in Fig. 1 to Fig. 3. The permissible deviation of body thickness “a” shall, as a rule, be within $\begin{smallmatrix} +15 \\ -10 \end{smallmatrix}$ %, but when the calculated value is below 1 mm, permissible deviation may be 1 mm.

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

- (1) The body, bonnet, disc and stem shall be as shown in Fig. 2 or Fig. 4.
- (2) The materials used for other parts shall, as a rule, be as shown in Fig. 2 or Fig. 4.

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

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

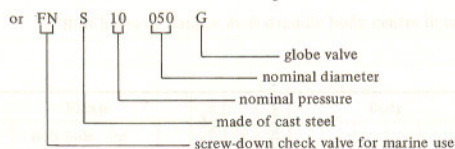
The globe valves shall be tested as follows:

- (a) Watertight inspection for valve seat:
 - Inlet side: 1.54 MPa
 - Outlet side: to be reduced from 1.54 MPa to 0.4 MPa
- (b) Hydraulic inspection for body: 2.1 MPa

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

Example: 1. For a globe valve of nominal diameter 50:

Cast steel 10 K-50 screw-down check globe valve for marine use



or JIS F 7471 - 50

2. For a globe valve of nominal diameter 150(stem guide type):

Cast steel 10 K-150 screw-down check globe valve for marine use

or FNS 10150 G

or JIS F 7471 - 150

3. For a globe valve of nominal diameter 150(piston-guide type):

Cast Steel 10 K-150 screw-down check globe valve Type P for marine use

or FNS 10150 GP

— piston-guide type

or JIS F 7471 - 150 P

8. **Marking**

8.1 The following particulars shall be marked on the body. When BC 6 is used for the guide, the maximum working temperature "205°C" shall be marked as well.

- (1) Nominal 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 or the abbreviated

8.2 For indication of check valve, the top of the stem shall be marked with a cross-groove painted in black. For piston-guide type, the peripheral side of the top of the stem shall be marked with a V-groove.

ISO 5208 – Industrial valves – Pressure testing for valves