



Shipbuilding – Cast iron 10 K gate valves

1. Scope This Japanese Industrial Standard specifies marine cast iron 10 K gate valves (hereinafter referred to as “gate valve”) used for steam, fuel, lubricating oil, fresh water, feed water, etc. lines in ships.

Remark: This standard makes reference to the following standards:

JIS B 0205 – Metric coarse screw threads

JIS B 0207 – Metric fine 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 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. Relation between fluid condition and maximum working pressure The relation between fluid condition and maximum working pressure for the gate valve shall be as given in **Table 1**.

Table 1

Fluid condition	Maximum working pressure MPa		
	Nominal dia. 200 mm or less	Nominal dia. 250 mm to 400 mm	Nominal dia. 450 mm to 600 mm
Saturated steam	0.5	0.3	
Oil and pulsation water	1.0		
Non-shock water of 120°C or less	1.4		1.2

3. Construction, shape and dimensions The construction, shape and dimensions of the gate valve shall be as shown in **Figs. 1 and 2**. And the body, bonnet and disc shall be properly ribbed where necessary. The permissible deviations of body thickness “a” and bonnet thickness “a₁” shall, as a rule, be within $\begin{matrix} +15 \\ -10 \end{matrix}$ %, but when the calculated value is below 1 mm, the deviation may be permitted up to 1 mm.

4. Materials The materials for the gate valve shall be as follows:

- (1) The materials for body, bonnet, disc, valve seat, stem and screwed piece shall be as shown in **Fig. 3**. The gate valves shall be classified into Class B and Class S according to the combination of materials.
- (2) The materials for other parts shall, as a rule, be as shown in **Fig. 3**.

5. Tests and inspection The gate valves shall be subjected to inspection on items (1) to (5) below in accordance with the requirements of **JIS F 7400**.

- (1) Material inspection
- (2) Visual inspection
- (3) Dimensional inspection

- (4) Assembly inspection
- (5) Hydraulic inspection

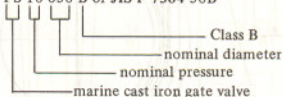
The gate valves shall be tested as given in **Table 2**. The watertight inspection for valve seat of valves with nominal diameters 300 or more may be performed at lower pressure specified by purchaser than the test pressures specified in **Table 2**.

Table 2

Nominal diameter	Test pressure MPa	
	Watertight inspection for valve seat	Hydraulic inspection for body
400 or less	1.54	2.1
450 to 600	1.32	1.8

- 6. Designation** The gate valves shall be designated by the title or the abbreviated symbol, **JIS** number and nominal diameter and material classification mark.

Example: For a gate valve of Class B and nominal diameter 50:
Marine cast iron 10 K – 50 gate valve B or
FS 10 050 B or JIS F 7364-50B



- 7. Marking** The following particulars shall be marked on the body.

- (1) Nominal pressure and nominal diameter

Example: 10 K – 50

- (2) Test pressure of watertight inspection for valve seat (only when test pressure for valve seat with nominal diameter 300 or more is specified by purchasers, the valve shall be marked.)
- (3) Manufacturer's name or mark
- (4) Year and month of manufacture or the abbreviated

Related Standard:

ISO 5208 – Industrial valves – Pressure testing of valves

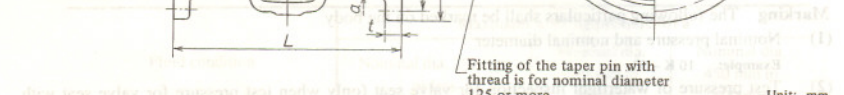
Unit: mm

Fig. 1 For nominal dia. 50 to 400