



Shipbuilding – Forged steel 40 K globe valves

1. **Scope** This Japanese Industrial Standard specifies forged steel 40 K 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 0207 – Metric fine 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 F 7442 – Shipbuilding – Steel pipe 40 K welded unions
- JIS G 3101 – Rolled steel for general structure
- JIS G 3201 – Carbon steel forgings
- JIS G 4051 – Carbon steel for machine structural use
- JIS G 4107 – Alloy steel bolting materials for high temperature service
- JIS G 4303 – Stainless steel bars
- JIS G 5101 – Carbon steel castings
- JIS G 5501 – Gray iron castings
- JIS G 5502 – Spheroidal graphite 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

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

Table 1

Fluid condition	Max. working pressure MPa
Steam of 425°C	4.0
Steam of 400°C	4.6
Steam of 350°C	5.2
Steam of 300°C or less	5.7
Air, gas, oil and pulsation water	6.2

Remark: When temperature is between the values in the table, the working pressure may be determined by interpolation.

3. **Classification** The valves shall be classified as given in Table 2 according to type of connection.

Table 2

Type	Type of connection	Nominal diameter
S	Screw thread type	6 and 10
U	Union type	
W	Socket weld type	6 ~ 25
F	Flange type	15 ~ 25

4. **Construction, shape and dimensions** The construction, shape and dimensions shall be as shown in Fig 1 to 4. The permissible deviation of body thickness "a" shall, as a rule, be within $\begin{smallmatrix} +15 \\ -10 \end{smallmatrix} \%$.
The bonnet may be either of the integral york type or of the separate york type.

5. **Materials** The materials of globe valve shall be as follows:

- (1) The materials of body, flange, valve bonnet, york, disc, and stem shall be as shown in Fig. 5.
- (2) The materials of other parts shall, as a rule, be as shown in Fig. 5.

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) Assembly inspection
- (5) Hydraulic inspection

The valves shall be tested as follows:

- (a) Watertight inspection for valve seat: 6.82 MPa
- (b) Hydraulic inspection for body: 9.3 MPa

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

Example: For a globe valve of nominal diameter 6 and type S:

Forged steel 40 K - 6 globe valve type S or
FGU 40 006 S or JIS F 7329-6 S

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

- (1) Nominal pressure and nominal diameter
Example: 40 K - 6
- (2) Arrowhead indicating the direction of flow
- (3) Manufacturer's name or mark
- (4) Year and month of manufacture or the abbreviated

In case

Remarks: 1.

- 2.