

Shipbuilding – Cast steel 20 K screw-down check angle valves

1. Scope This Japanese Industrial Standard specifies cast steel 20 K screw-down check angle valves (hereinafter referred to as “angle 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 4051 – Carbon steel for machine structural use

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 350 °C	2.6
Steam of 300 °C	2.9
Steam of 220 °C or less	3.1
Air, gas, oil and pulsation water	3.1
Non-shock water of 120 °C or less	3.4

Remarks: 1. When temperature is determined between the values of the table, the working pressure may be specified according to interpolation.

2. When BC 6 is used for the guide, the fluid condition shall be 205°C or less.

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

1. For the nominal size 100 mm or less, the guide may be fitted to the disc, if specified by the purchaser. The permissible deviation of body thickness “a” shall, as a rule, be within $^{+15}_{-10}$ %, but when the calculated value is below 1 mm, the permissible deviation may be 1 mm. The seating face on the body may be deposited.

4. Materials The materials shall be as follows:

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

5. Tests and inspection The angle 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 angle valves shall be tested as follows:

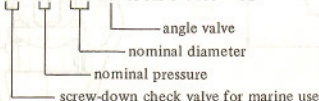
- (a) Watertight inspection for valve seat:
 - Inlet side: 3.74 MPa
 - Outlet side: at stem fully raised 3.74 MPa to 1.0 MPa
- (b) Hydraulic inspection for body: 5.1 MPa

6. Designation The angle valves shall be designated by the title and nominal diameter symbol. JIS number may be used in place of the title.

Example: For an angle valve of nominal diameter 32:

Cast steel 20 K-32 screw-down check angle valve for marine use

or FN 20 032 G or JIS F 7473 - 32



7. Marking

7.1 The following particulars shall be marked on the body:

- (1) Nominal pressure and nominal diameter

Example: 20 K-32

- (2) Arrowhead indicating the direction of flow
- (3) Year and month of manufacture or the abbreviated
- (4) Manufacturer's name or mark
- (5) 205°C (for the valves using BC 6 for guide)

7.2 For indication of check valve, the top of the stem shall be marked with a cross-groove painted in black.

Related Standard:

ISO 5208 – Industrial valves – Pressure testing for valves