



Shipbuilding - Oil tank emergency shut-off valves

1. **Scope** This Japanese Industrial Standard specifies marine fuel oil tank and lubricating oil tank emergency shut-off valves (hereinafter referred to as "shut-off valve").

2. **Reference standards** The following standards form part of the requirements of this Standard when quoted. The latest edition of these standards shall be applied.

JIS B 0216	Metric trapezoidal screw threads
JIS B 1575	Grease nipples
JIS B 2238	General rules for steel pipe flanges
JIS B 2240	General rules for copper alloy pipe flanges
JIS B 2704	Helical compression and extension springs - Requirements for design
JIS F 0503	Coiled springs for marine machinery
JIS F 7102	Shipbuilding - Piping system in machinery space
JIS F 7400	Shipbuilding - Valves and cocks - General inspection requirement
JIS G 3101	Rolled steels for general structure
JIS G 3505	Low carbon steel wire rods
JIS G 3522	Piano wires
JIS G 4051	Carbon steels for machine structural use
JIS G 4303	Stainless steel bars
JIS G 4801	Spring steels
JIS G 5101	Carbon steel castings
JIS G 5121	Stainless steel castings
JIS G 5501	Grey iron castings
JIS G 5502	Spheroidal graphite iron castings
JIS H 3100	Copper and copper alloy sheets, plates and strips
JIS H 3250	Copper and copper alloy rods and bars wires
JIS H 3260	Copper and copper alloy wires
JIS H 5120	Copper and copper alloy castings

3. **Pressure rating** The maximum working pressure of shut-off valves shall be 0.1 MPa.

4. **Type** The types of shut-off valve shall be as given in Table 1 according to the shape of body, the side of the lever fitted and the shutting-off procedure. (See Figs. 1 through 4)

Table 1

Shape of body	Wire-operated	Pneumatically operated
Globe valve	A ₁ W Type, A ₂ W Type	A ₁ A Type, A ₂ A Type
Globe valve (body outlet facing down)	B ₁ W Type, B ₂ W Type	B ₁ A Type, B ₂ A Type
Angle valve	L ₁ W Type, L ₂ W Type	L ₁ A Type, L ₂ A Type

5. **Construction, shape and dimensions** The construction, shape and dimensions of shut-off valves shall be as shown in Figs. 1 through 4. However, dimensions other than inlet and outlet diameters, face-to-face distances and flange dimensions are shown for reference only.

The direction of the shut-off valve at tank connection may be normal or reverse. The construction of shut-off valves shown in Figs. 2 and 4 is an example.

6. **Materials** The materials of shut-off valves shall conform to the following requirements.

- The materials of body, bonnet, disc, valve seat and stem shall be as shown in Fig. 5.
- The materials of other parts shall, in principle, be as shown in Fig. 5.

7. Tests and inspection

7.1 General inspection General inspections of shut-off valves shall be carried out on the following items, a) through e), in accordance with the requirements of JIS F 7400.

- a) Material inspection
- b) Visual inspection
- c) Dimensional inspection
- d) Assembly inspection
- e) Hydraulic inspection The hydraulic inspection shall be carried out at the following test pressures:
 - 1) Leak tests for valve seat 0.2 MPa
 - 2) Hydraulic inspection for body 0.7 MPa

7.2 Operation inspection The operation inspection for shut-off valves shall be carried out in such a way that the body is filled with water with the shut-off valve at its full open position, and confirm if the shut-off valve is closed when the lever is lifted. There shall be no abnormalities when a test pressure of 0.1 MPa is applied from the side of tank connection.

In the case of the pneumatic type, it shall be confirmed that the shut-off valve closes when compressed air at a pressure of 0.3 MPa is applied and the piston functions securely.

7.3 Spring inspection The spring inspection of shut-off valves shall be carried out in accordance with JIS F 0503 or JIS B 2704.

8. Designation Shut-off valves shall be designated by title, JIS No., nominal dia. and type or abbreviation.

Example: For a shut-off valve of A Type, W Type:

Marine oil tank emergency shut-off valve, A Type, W Type or

or

FES 025 A₁W or JIS F 7399-25A₁W

type

nominal dia.

marine oil tank emergency shut-off valve

9. Marking

9.1 The following particulars shall be marked on the surface of the valve body.

a) Nominal diameter

Example: 25

b) Arrow mark indicating the flow direction

c) Manufacturer's name or abbreviated trade mark

d) Year of manufacture

9.2 The characters of 10K or 5K shall be stamped on the outer periphery of the flange.



Remarks: 1. Flanges for nominal dia. 40 or less shall conform to the requirements of **JIS B 2240** for a nominal pressure of 10K, and flanges with a nominal dia. of 50 or more shall conform to the requirements of **JIS B 2238** for a nominal pressure of 10K. When specified by the purchaser, however, flanges may conform to the requirements of **JIS B 2240** for a nominal pressure of 5K, or **JIS B 2238** for a nominal pressure of 5K.

2. Threads d_6 shall conform to the requirements of **JIS B 0216**.

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