



Shipbuilding – Cast steel 5K angle valves

1. Scope This Japanese Industrial Standard specifies cast steel 5K angle valves (hereinafter referred to as "angle valve") used for 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 4305 – Cold rolled stainless sheets and plates

JIS G 5101 – Carbon steel castings

JIS G 5501 – Gray iron castings

JIS H 3100 – Copper and copper alloy sheets, plates and strips

JIS H 3250 – Copper and copper alloy rods and bars

JIS H 3260 – Copper and copper alloy wires

JIS H 5111 – Brass 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
Oil and pulsation water	0.5
Non-shock water of 120°C or less	0.7

3. Construction, shape and dimensions The construction, shape and dimensions shall be as shown in Figs. 1. The permissible deviation of body thickness "a" shall, as a rule, be within $\begin{smallmatrix} +15 \\ -10 \end{smallmatrix}$ %.

4. Materials The materials shall be as follows:

- (1) The body, bonnet, disc, valve seat and stem shall be as shown in Fig. 2. When specified by the purchaser, the materials as shown in parentheses may be used for the disc, valve seat, stem, etc. In this case, the valve seating face shall be deposited with austenitic stainless steel.
- (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.

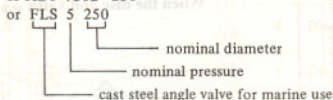
- (1) Material inspection
- (2) Visual inspection
- (3) Dimensional inspection
- (4) Assembly inspection
- (5) Hydraulic inspection

The angle valves shall be tested as follows:

- (a) Watertight inspection for valve seat: 0.77 MPa
- (b) Hydraulic inspection for body: 1.05 MPa

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

Example: For an angle valve of nominal diameter 250 mm:
Cast Steel 5 K - 250 Angle Valve for Marine Use
or JIS F 7312 - 250
or FLS 5 250



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

- (1) Nominal pressure and nominal diameter
Example: 5 K - 250
- (2) Arrowhead indicating the direction of flow
- (3) Manufacturer's name or mark
- (4) Year and month of manufacture or the abbreviated

Related Standard:

ISO 5208 — Industrial valves — Pressure testing for valves

Valve size (mm)	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1500	1800	2000	2400	3000	3600	4200	4800	5400	6000	7200	8400	9600	10800	12000	14400	16800	19200	21600	24000	28800	33600	38400	43200	48000	54000	60000	72000	84000	96000	108000	120000	144000	168000	192000	216000	240000	288000	336000	384000	432000	480000	540000	600000	720000	840000	960000	1080000	1200000	1440000	1680000	1920000	2160000	2400000	2880000	3360000	3840000	4320000	4800000	5400000	6000000	7200000	8400000	9600000	10800000	12000000	14400000	16800000	19200000	21600000	24000000	28800000	33600000	38400000	43200000	48000000	54000000	60000000	72000000	84000000	96000000	108000000	120000000	144000000	168000000	192000000	216000000	240000000	288000000	336000000	384000000	432000000	480000000	540000000	600000000	720000000	840000000	960000000	1080000000	1200000000	1440000000	1680000000	1920000000	2160000000	2400000000	2880000000	3360000000	3840000000	4320000000	4800000000	5400000000	6000000000	7200000000	8400000000	9600000000	10800000000	12000000000	14400000000	16800000000	19200000000	21600000000	24000000000	28800000000	33600000000	38400000000	43200000000	48000000000	54000000000	60000000000	72000000000	84000000000	96000000000	108000000000	120000000000	144000000000	168000000000	192000000000	216000000000	240000000000	288000000000	336000000000	384000000000	432000000000	480000000000	540000000000	600000000000	720000000000	840000000000	960000000000	1080000000000	1200000000000	1440000000000	1680000000000	1920000000000	2160000000000	2400000000000	2880000000000	3360000000000	3840000000000	4320000000000	4800000000000	5400000000000	6000000000000	7200000000000	8400000000000	9600000000000	10800000000000	12000000000000	14400000000000	16800000000000	19200000000000	21600000000000	24000000000000	28800000000000	33600000000000	38400000000000	43200000000000	48000000000000	54000000000000	60000000000000	72000000000000	84000000000000	96000000000000	108000000000000	120000000000000	144000000000000	168000000000000	192000000000000	216000000000000	240000000000000	288000000000000	336000000000000	384000000000000	432000000000000	480000000000000	540000000000000	600000000000000	720000000000000	840000000000000	960000000000000	1080000000000000	1200000000000000	1440000000000000	1680000000000000	1920000000000000	2160000000000000	2400000000000000	2880000000000000	3360000000000000	3840000000000000	4320000000000000	4800000000000000	5400000000000000	6000000000000000	7200000000000000	8400000000000000	9600000000000000	10800000000000000	12000000000000000	14400000000000000	16800000000000000	19200000000000000	21600000000000000	24000000000000000	28800000000000000	33600000000000000	38400000000000000	43200000000000000	48000000000000000	54000000000000000	60000000000000000	72000000000000000	84000000000000000	96000000000000000	108000000000000000	120000000000000000	144000000000000000	168000000000000000	192000000000000000	216000000000000000	240000000000000000	288000000000000000	336000000000000000	384000000000000000	432000000000000000	480000000000000000	540000000000000000	600000000000000000	720000000000000000	840000000000000000	960000000000000000	1080000000000000000	1200000000000000000	1440000000000000000	1680000000000000000	1920000000000000000	2160000000000000000	2400000000000000000	2880000000000000000	3360000000000000000	3840000000000000000	4320000000000000000	4800000000000000000	5400000000000000000	6000000000000000000	7200000000000000000	8400000000000000000	9600000000000000000	10800000000000000000	12000000000000000000	14400000000000000000	16800000000000000000	19200000000000000000	21600000000000000000	24000000000000000000	28800000000000000000	33600000000000000000	38400000000000000000	43200000000000000000	48000000000000000000	54000000000000000000	60000000000000000000	72000000000000000000	84000000000000000000	96000000000000000000	108000000000000000000	120000000000000000000	144000000000000000000	168000000000000000000	192000000000000000000	216000000000000000000	240000000000000000000	288000000000000000000	336000000000000000000	384000000000000000000	432000000000000000000	480000000000000000000	540000000000000000000	600000000000000000000	720000000000000000000	840000000000000000000	960000000000000000000	1080000000000000000000	1200000000000000000000	1440000000000000000000	1680000000000000000000	1920000000000000000000	2160000000000000000000	2400000000000000000000	2880000000000000000000	3360000000000000000000	3840000000000000000000	4320000000000000000000	4800000000000000000000	5400000000000000000000	6000000000000000000000	7200000000000000000000	8400000000000000000000	9600000000000000000000	10800000000000000000000	12000000000000000000000	14400000000000000000000	16800000000000000000000	19200000000000000000000	21600000000000000000000	24000000000000000000000	28800000000000000000000	33600000000000000000000	38400000000000000000000	43200000000000000000000	48000000000000000000000	54000000000000000000000	60000000000000000000000	72000000000000000000000	84000000000000000000000	9600000000000000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