



Shipbuilding – Bronze 16 K cocks

1. Scope This Japanese Industrial Standard specifies bronze 16 K cocks (hereinafter referred to as “cock”) 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 0207 – Metric fine screw threads

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 7440 – Shipbuilding – Copper pipe 20 K brazed unions

JIS F 7442 – Shipbuilding – Steel pipe 40 K Welded Unions

JIS G 4051 – Carbon steel for machine structural use

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

JIS H 3250 – Copper and copper alloy rods and bars

JIS H 5101 – Brass castings

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	
	Nominal dia. 6 and 10	Nominal dia. 15 and 20
Saturated steam	1.0	0.5
Oil and pulsation water	1.6	1.3
Non-shock water of 120°C or less	2.0	1.6

3. Classification The cocks shall be classified as given in Table 2. According to the type of connecting. While, the plug shall be sorted into plug A and plug B according to the direction of port. (Refer to Figs. 1 and 2.)

Table 2

Type	Type of connecting	Applicable nominal diameter
S	Screwed	6 to 20
U	Union	6 and 10

4. Construction, shape and dimensions The construction, shape and dimensions shall be as shown in Figs. 1 and 2. The permissible deviation of body thickness “a” shall, as a rule, be within $\pm 15\%$, but when the calculated value is below 0.5 mm, the permissible deviation may be 0.5 mm.

When the copper pipe is applied, a cock with bite type union of nominal diameter 6 and 10 may be used.

5. Materials The materials of cock shall be as follows:

(1) The body and plug shall be as shown in Fig. 1 and 2.

(2) The materials used for other parts shall, as a rule, be as shown in Fig. 1 and 2.

6. Tests and inspection The cocks 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 cocks shall be tested under the test pressure as given in Table 3.

The watertight inspection for plug shall be carried out under the condition that plug can be changed over easily by adding a force of 130 N or less to the end of the plug handle.

Table 3

Nominal dia.	Test pressure MPa	
	Watertight inspection for plug	Body
6 and 10	2.20	3.00
15 and 20	1.76	2.40

7. Designation The cocks shall be designated by the title, nominal diameter, class and type of plug or symbol. JIS number may be used in place of the title.

Example: 1. For a cock of nominal diameter 6 mm, type S, plug A with union for copper pipe:

Bronze 16 K – 6 cock for marine use, type S, A with union for copper pipe

or FCS 16 006 SAC or JIS F 7387-6 SAC

union for copper pipe
type of plug
type of connecting
nominal diameter
nominal pressure
cock for marine use

2. For a cock of nominal diameter 6 mm, type S, plug A with union for steel pipe:

Bronze 16 K – 6 cock for marine use, type S, A, with union for steel pipe

or FCS 16 006 SAS or JIS F 7387-6 SAS

union for steel pipe

3. For a cock of nominal diameter 6 mm, type S, plug A with bite type union for copper pipe:

Bronze 16 K – 6 cock for marine use, type S, A, with bite type union for copper pipe

or FCS 16 006 SABC or JIS F 7387-6 SABC

bite type union for copper pipe

8. Marking

8.1 The following particulars shall be marked on the body:

- (1) Nominal pressure and nominal diameter

Example: 16 K-6

- (2) Manufacturer's name or mark

- (3) Year and month of manufacture of the abbreviated (1)

Note (1) May also be shown on a tag or the like, if it is difficult to be marked on the body.

8.2 On the plug handle, arrowhead indicating the plug port direction.

Related Standard:

ISO 5208 – Industrial valves – Pressure testing for valves