



**PRODUCT MANUAL FOR  
WATER FITTINGS - COPPER ALLOY FLOAT VALVES  
(HORIZONTAL PLUNGER TYPE)  
ACCORDING TO IS 1703: 2000**

*This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.*

1.	<b>Product</b>	:	IS 1703: 2000
	<b>Title</b>	:	Water Fittings – Copper Float Valves (Horizontal Plunger Type)
	<b>No. of Amendments</b>	:	1
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	(a) As per Clause 5.1 and Table 1 of IS 1703: 2000 (b) Float – IS 9762
b)	<b>Grouping guidelines</b>	:	Each Class and Size of Float Valve shall be tested for all requirements to cover that particular variety in the Scope of the Licence.
c)	<b>Sample Size</b>	:	(a) Valve – 1 No (b) For Chemical Testing - 100 gm drillings Approx.)
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX - A
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX - B
5.	<b>Possible tests in a day:</b>		
	(i) Dimensions of valve (ii) Hydrostatic (iii) Shutting off test (iv) Mechanical strength of lever		
6.	<b>Scope of the Licence:</b>		
	Name of the product	Water Fittings – Copper Float Valves (Horizontal Plunger Type)	
	Class	High pressure (HP) / Low pressure (LP)	
	Nominal Size	--- mm -	
	Inlet shank	<ul style="list-style-type: none"> <li>• Horizontal (for all sizes excluding 15 mm)</li> <li>• Horizontal or Vertical (for 15 mm size)</li> </ul>	

**ANNEX A****List of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>Sl No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1	Construction and dimensions of components (Clause 7)	<ul style="list-style-type: none"> <li>- Thread Gauges</li> <li>- Vernier caliper</li> <li>- Micrometer</li> <li>- Thread ring gauges</li> <li>- Thread plug gauges</li> <li>- Snap gauges</li> <li>- Go- No Go gauges for checking various dimensions</li> <li>- Depth gauge</li> <li>- Templates</li> <li>- Filler gauges</li> </ul>
2	Hydraulic test (Clause 8.1), Shutting off test (clause 8.2)	<ul style="list-style-type: none"> <li>- Hydrostatic pressure test equipment with end plugs, pressure gauge, timer and arrangement for shutting off test etc</li> <li>- Stop watch</li> </ul>
3	Mechanical Strength of Lever (Clause 8.3)	<ul style="list-style-type: none"> <li>- Mechanical strength of lever test arrangement with rigid fixture</li> <li>- Dead loads</li> <li>- Vernier caliper/Steel scale</li> </ul>

*The above list is indicative only and may not be treated as exhaustive.*

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**ANNEX B**

**Scheme of Inspection and Testing**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. LABELLING AND MARKING** – As per the requirement of IS 1703: 2000.

**4. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**4.1** All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

**5. REJECTIONS** – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

**TABLE 1**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
<b>5, Table 1</b>	<b>Material</b>						
i)	<b>Body and parts of fittings (except lever or rod and back nut):</b> a) Cast brass b) Leaded Tin Bronze	5.1, Table 1	IS 1703 IS 292 IS 1264 IS 318	S	One	Each cast	@
	Physical Test			S	Three	Every tenth or fifth melt manufactured (See remarks)	
	Chemical Composition			S	Three		
ii)	<b>Lever rod:</b> Brass rod	5.1, Table 1	IS 1703 IS 319 IS 8364 IS 320 IS 6912		One	Each consignment	S
iii)	<b>Back nut and nuts for inlet pipe</b> a) Brass b) Leaded tin bronze	5.1, Table 1	IS 1703 IS 320 IS 1264 IS 292 IS 318	S	One	Each consignment	Further testing is not required, if received with test certificate or ISI marked. In case of cast or die cast brass, testing as per (i) above to be carried out.

iv)	<b>Washer:</b> Synthetic rubber	5.1, Table 1	IS 1703 IS 4346	S	One	Each consignment	Further testing is not required, if received with test certificate.	
v)	<b>Inlet pipe:</b> Brass	5.1, Table 1	IS 1703 IS 407	S	One	Each consignment		
6	Manufacture and workmanship	6.1, 6.2	IS 1703	-	Each valve	-	-	
7	Construction	7.2,	IS 1703	R	Each valve	-	-	
7.4	Dimensions of body	7.4, Fig 2 Table 2(a), Table 2(b), Table 3(a), Table 3(b)	IS 1703	R	One valve	Every hour for each type of valve produced	In case of failure, entire production during that hour shall be tested and only conforming components shall be accepted.	
7.5	Screw threads	7.5	IS 1703 IS 2643 (Part 3) IS 4218 (Part 1 to 6)	R	One valve	Every hour for each type of valve produced		
7.6	Piston	7.6, Table 4(a), Table 4(b)	IS 1703	R	One valve	Every hour for each type of valve produced		
7.7	Levers	7.7.1, 7.7.2, 7.7.3, 7.7.4, 7.7.5, 7.7.6, 7.7.7 Table 5(a), Table 5(b)	IS 1703 IS 9762	R	One valve	Every hour for each type of valve produced		
7.8	Washer	7.8, Table 4(a), Table 4(b)	IS 1703	R	One valve	Every hour for each type of valve produced		
7.9	Silencing pipes and anti-siphonage provision	7.9.1, 7.9.2	IS 1703  -	R	Each			Arrangement for installing silencing pipe may be made as per requirements of the purchaser.

7.10	Floats	7.10	IS 1703 IS 9762	S	One	Each consignment	Further testing is not required, if received with manufacturers test certificate or ISI marked.
7.11	Back nut	7.11, Table 6	IS 1703 IS 2643 (Part 3)	R	One	From each hour production for each type of valve	In case of failure, entire production during that hour shall be tested and only conforming components shall be accepted.
8	<b>Testing</b>						
8.1	Hydraulic test	8.1	IS 1703	R	Each Valve	-	-
8.2	Shutting off test	8.2	IS 1703	R	One	Every tenth valve assembled	-
8.3	Test for mechanical strength of lever	8.3, Table 7	IS 1703	R	One	Every tenth valve assembled	-

@ Frequency of testing shall be one sample for each melt of 1000 kg or part thereof for first three melts. After that one sample shall be tested from every tenth melt, if manufactured from tested ingots/billets else one sample from every fifth melt shall be tested. On failure of any sample, every melt shall be tested till three consecutive samples pass.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

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