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Report No. : 205252PC200399

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REPORT ON TESTING OF GUNMETAL FLOAT OPERATED VALVE





Information Supplied by Client

Client : Wah Hung Fire Prevention Equipment Co., Limited
Client Address : G/F, No. 129, Tai Nan Street, Prince Edward, Kowloon, Hong Kong
Project : Testing of Gunmetal Float Operated Valve
Sample Description : Gunmetal Float Operated Valve
Product Type : Float Valve
Brand : WAH HUNG
Country of Origin : China
Manufacturer : Wah Nan Fire Fighting Equipment Co., Ltd
Client I.D. : WH024A

Laboratory Information

Lab. Sample I.D. : PC200399/1-4
Date Received : 06 October 2020
Date Test Started : 09 November 2020
Date Test Completed : 18 November 2020
Test Method : BS 1212 : part 1 : 1990 and BS EN 1982 : 2008

Sample Information

Sample Item	Description	Nominal Size (DN)	Model No.	Body Marking
1	Gunmetal Float Operated Valve	25mm (1")	WH024A-25	 1
2		32mm (1-1/4")	WH024A-32	 1 1/4
3		65mm (2-1/2")	WH024A-65	 2 1/2
4		80mm (3")	WH024A-80	 3

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Test Results

1. Dimensions

BS 1212 : part 1 : 1990 (Section 3) and Base on Manufacturer Requirement

Lab. Sample I.D.	Nominal Size (DN)	BS Requirement (Nominal Size) (DN)	G (mm)	L1 (mm)	Manufacturer Requirement (mm)		Results
					G (mm)	L1 (mm)	
PC200399/1	25mm (1")	25mm (1")	1"	22	1"	22	Pass
PC200399/2	32mm (1-1/4")	32mm (1-1/4")	1-1/4"	35	1-1/4"	35	Pass
PC200399/3	65mm (2-1/2")	65mm (2-1/2")	2-1/2"	45	2-1/2"	45	Pass
PC200399/4	80mm (3")	80mm (3")	3"	45	3"	45	Pass

2. HYDRAULIC PRESSURE TEST

(BS 1212 : Part 1 : 1990, clause 24)

Lab Sample I.D.	Hydraulic pressure test				
	Nominal Size (DN)	Test Pressure (bar)	Duration (min.)	Observation	Remark
PC200399/1	25mm (1")	20	15	No leakage was detected during the test	Pass
PC200399/2	32mm (1-1/4")	20	15	No leakage was detected during the test	Pass
PC200399/3	65mm (2-1/2")	20	15	No leakage was detected during the test	Pass
PC200399/4	80mm (3")	20	15	No leakage was detected during the test	Pass
BS Requirement		20	15 ⁺¹ ₋₀	No leakage or sweating	--

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3. SHUT-OFF TEST

(BS 1212 : Part 1 : 1990, clause 24)

Lab Sample I.D.	Nominal Size (inches)	Shut-off test				
			Test Pressure (bar)	Duration (sec.)	Observation	Remark
PC200399/1	25mm (1")	1 st test	3	60	No leakage was detected during the test	Pass
		2 nd test	7			
		3 rd test	14			
PC200399/2	32mm (1-1/4")	1 st test	3	60	No leakage was detected during the test	Pass
		2 nd test	7			
		3 rd test	14			
PC200399/3	65mm (2-1/2")	1 st test	3	60	No leakage was detected during the test	Pass
		2 nd test	7			
		3 rd test	14			
PC200399/4	80mm (3")	1 st test	3	60	No leakage was detected during the test	Pass
		2 nd test	7			
		3 rd test	14			
BS Requirement	for low pressure valve		3	--	No leakage	--
	for medium pressure valve		7			
	for high pressure valve		14			

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4. Chemical Composition (Body DN25)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.0	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.28	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.6	4.0 – 6.0
5. Tin (Sn) content, %	4.8	4.0 – 6.0
6. Zinc (Zn) content, %	4.4	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	<0.04	0.3 max.
9. Sulfur (S) content, %	0.04	0.10 max.
10. Antimony (Sb) content, %	0.07	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

4.1. Chemical Composition (Body DN65)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.4	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.42	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.1	4.0 – 6.0
5. Tin (Sn) content, %	4.9	4.0 – 6.0
6. Zinc (Zn) content, %	4.5	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.04	0.3 max.
9. Sulfur (S) content, %	0.04	0.10 max.
10. Antimony (Sb) content, %	0.03	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

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4.2. Chemical Composition (Body DN80)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	85.6	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.27	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.6	4.0 – 6.0
5. Tin (Sn) content, %	4.9	4.0 – 6.0
6. Zinc (Zn) content, %	4.7	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.04	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.05	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

4.3. Chemical Composition (Piston DN25)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.2	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.28	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.5	4.0 – 6.0
5. Tin (Sn) content, %	4.8	4.0 – 6.0
6. Zinc (Zn) content, %	4.2	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.05	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.06	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

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4.4. Chemical Composition (Piston DN65)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.5	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.27	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.1	4.0 – 6.0
5. Tin (Sn) content, %	4.7	4.0 – 6.0
6. Zinc (Zn) content, %	4.5	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.07	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.05	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

4.5. Chemical Composition (Piston DN80)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.5	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.27	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.0	4.0 – 6.0
5. Tin (Sn) content, %	4.7	4.0 – 6.0
6. Zinc (Zn) content, %	4.5	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.07	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.05	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

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4.6. Chemical Composition (Lever DN25)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.5	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.27	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.1	4.0 – 6.0
5. Tin (Sn) content, %	5.0	4.0 – 6.0
6. Zinc (Zn) content, %	4.2	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.04	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.06	0.25 max.
11. Silicon (Si) content, %	0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

4.7. Chemical Composition (Lever DN65)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	86.8	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.28	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.1	4.0 – 6.0
5. Tin (Sn) content, %	4.8	4.0 – 6.0
6. Zinc (Zn) content, %	4.0	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.07	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.04	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.

Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

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4.8 Chemical Composition (Lever DN80)

Testing items	Results	Specification according to BS EN 1982 : 2008 Grade CC491K castings
1. Copper (Cu) content, %	85.9	83.0 – 87.0 ¹⁾
2. Nickel (Ni) content, %	0.27	2.0 max.
3. Phosphorus (P) content, %	<0.03	0.10 max.
4. Lead (Pb) content, %	4.8	4.0 – 6.0
5. Tin (Sn) content, %	5.1	4.0 – 6.0
6. Zinc (Zn) content, %	4.0	4.0 – 6.0
7. Aluminium (Al) content, %	<0.01	0.01 max.
8. Iron (Fe) content, %	0.06	0.3 max.
9. Sulfur (S) content, %	<0.04	0.10 max.
10. Antimony (Sb) content, %	0.06	0.25 max.
11. Silicon (Si) content, %	<0.01	0.01 max.



Remark: ¹⁾ Including nickel

Note: Based on the test results of the submitted sample, it is found that the sample complies with the chemical composition specification of BS EN 1982 : 2008 Grade CC491K castings.

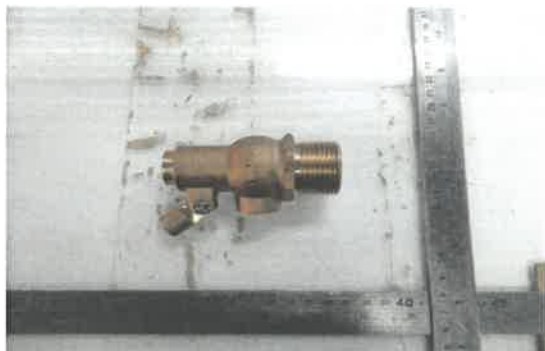
5. Summary of Results

Dimensions -- Pass (Test size: DN 25, 32, 65 & 80)
Hydraulic Pressure Test -- Pass (Test size: DN 25, 32, 65 & 80)
Shut-off Test -- Pass (Test size: DN 25, 32, 65 & 80)
Chemical composition (Body) -- Pass (Test size: DN 25, 65 & 80)
Chemical composition (Piston) -- Pass (Test size: DN 25, 65 & 80)
Chemical composition (Lever) -- Pass (Test size: DN 25, 65 & 80)

Remark : The test results relate only to the samples tested.

Checked by :  Date : 23 APR 2021 Certified by :  Date : 23 APR 2021
Ng Shu Shing Chris
Assistant Manager (Plumbing Components)

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Test Sample (DN25)



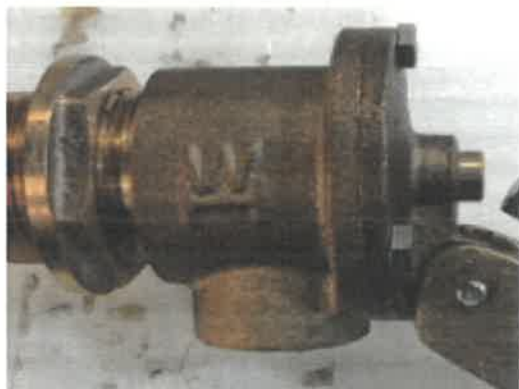
Body Marking (DN25)



Body Marking (DN25)



Test Sample (DN32)



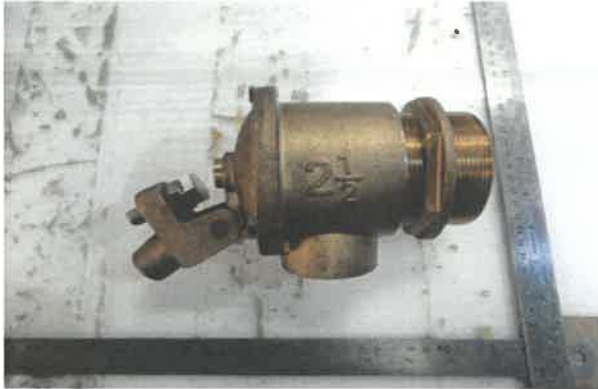
Body Marking (DN32)



Body Marking (DN32)

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Test Sample (DN65)



Body Marking (DN65)



Body Marking (DN65)



Test Sample (DN80)



Body Marking (DN80)



Body Marking (DN80)

**** End of Report ****