

Summary of Test Results

Reference no. : BC-SUMMARY-2021-150

Customer : Gate Way Valve & Fitting Ltd.

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Sample description : Wafer Type Silent Check Valve

Manufacturer : Val-matic Valve & Manufacturing Corp.

Brand name : Valmatic

Body marking : VAL MATIC CORP.

Model no. : 1400AHKXF

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Test standard : BS EN 12334 : 2001 / WIS 4-52-01 Dec. 1992 : Issue 1 / BS EN 1561 : 2011 / BS EN 1982 : 2008

Test period : 02 to 29 September 2021

A) Sample List

DN (mm)	Inch	Nominal pressure (PN)	Specimen no.
50	2"	25	210817-2666-001
65	2-1/2"	25	210817-2666-002
80	3"	25	210817-2666-003
100	4"	25	210817-2666-004
150	6"	25	210817-2666-005
200	8"	16	210817-2666-006

B) Test Item**1) Dimensions Check (BS EN 12334 : 2001 Clause 4.1.3)**

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210817-2666
65	2-1/2"	Passed	
80	3"	Passed	
100	4"	Passed	
150	6"	Passed	
200	8"	Passed	

2) Coating Thickness Test (WIS 4-52-01 Dec. 1992 : Issue 1 Appendix B)

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210817-2666
65	2-1/2"	Passed	
80	3"	Passed	
100	4"	Passed	
150	6"	Passed	
200	8"	Passed	

Summary of Test Results

Reference no. : BC-SUMMARY-2021-150

B) Test Item (con't)

3) Pressure Test (BS EN 12334 : 2001 Clause 5.1)

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210817-2666
65	2-1/2"	Passed	
80	3"	Passed	
100	4"	Passed	
150	6"	Passed	
200	8"	Passed	

4) Tensile Test (BS EN 1561 : 2011 Clause 7.2.1 Table 1 (Grade EN-GJL-250) and Clause 9.1)

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210817-2666
100	4"	Passed	
200	8"	Passed	

5) Chemical Composition (Seat Ring) (BS EN 1982 : 2008 Table 23b Grade CC491K)

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210903-2171
100	4"	Passed	210903-2173
200	8"	Passed	210903-2175

6) Chemical Composition (Disc) (BS EN 1982 : 2008 Table 23b Grade CC491K)

DN (mm)	Inch	Test results	Castco LRN
50	2"	Passed	210903-2172
100	4"	Passed	210903-2174
200	8"	Passed	210903-2176

Prepare by : _____


Date : 30 September 2021



FU HO MAN
Assistant Technical Manager

Review by : _____

Date : 30 September 2021



WONG KA MAN
Senior Manager

Test Report
Check Valves - Dimensions Check
(BS EN 12334 : 2001 Clause 4.1.3)

Date of issue : 30 September 2021

Page 1 of 7 page(s)

Castco LRN : 210817-2666

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Type Silent Check Valve

Sample description : Wafer Type Silent Check Valve

Manufacturer : Val-matic Valve & Manufacturing Corp.

Brand name : Valmatic

Body marking : VAL MATIC CORP.

Model no. : 1400AHKXF

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 17 August 2021

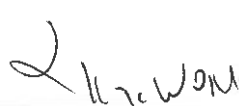
Date of test : 02 to 03 September 2021

Specimen no.	210817-2666-001	210817-2666-002	210817-2666-003	210817-2666-004	210817-2666-005	210817-2666-006	
DN (mm)	50	65	80	100	150	200	
Inch	2"	2-1/2"	3"	4"	6"	8"	
Nominal pressure (PN)	25	25	25	25	25	16	
A (mm)	Measured mean value	110	128	146	179	250	344
	Manufacturer requirement	108	127	146	178	248	340
B (mm)	Measured mean value	69	74	81	103	142	168
	Manufacturer requirement	67	73	79	102	140	165

Remark(s) :

1. Test results relate only to the specimen tested.

Checked by :  **FU HO MAN**
Assistant Technical Manager

Certified by :  **WONG KA MAN**
Senior Manager



佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED



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Website: www.castco.com.hk

Test Report

Valves - Coating Thickness Measurement

(WIS 4-52-01 Dec. 1992 : Issue 1 Appendix B in conjunction with the following specification(s) : WIS 4-52-01 Dec. 1992 : Issue 1 Cl. 12.7.1)

Date of issue : 30 September 2021

Page 2 of 7 page(s)

Castco LRN : 210817-2666

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : --

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : --

Job title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Type Silent Check Valve

Sample description : Wafer Type Silent Check Valve

Manufacturer : Val-matic Valve & Manufacturing Corp.

Brand name : Valmatic

Body marking : VAL MATIC CORP.

Model no. : 1400AHKXF

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 17 August 2021

Date of test : 03 September 2021

Specimen no.	210817-2666-001	210817-2666-002	210817-2666-003	210817-2666-004	210817-2666-005	210817-2666-006	
DN (mm)	50	65	80	100	150	200	
Inch	2"	2-1/2"	3"	4"	6"	8"	
Nominal pressure (PN)	25	25	25	25	25	16	
Ambient temperature (°C)	24.0	24.0	24.0	24.0	24.0	24.0	
Measured value of coating thickness at external surface (µm)	1	586	425	521	594	653	
	2	409	431	566	539	731	
	3	413	416	521	552	742	
	4	452	419	525	539	564	630
	5	441	576	519	519	572	851
Measured value of coating thickness at internal surface (µm)	6	426	561	561	530	527	933
	7	438	612	522	465	478	894
	8	452	592	591	378	441	997
	9	512	427	642	517	465	852
	10	572	438	437	528	698	822
	11	462	517	475	399	471	954
	12	398	528	625	396	485	988
	13	461	565	429	417	493	972
	14	582	451	491	428	525	972
	15	573	486	477	344	518	853
Mean	478.5	496.3	526.8	476.3	523.5	856.3	
Minimum coating thickness (µm)	398	416	429	344	441	630	
Maximum coating thickness (µm)	586	612	642	594	698	997	
Standard deviation (µm)	67.8	71.4	62.1	76.6	61.8	120.5	
Manufacturer requirement (µm)	Minimum coating thickness						min. 200
	Maximum coating thickness						max. 2000

Remark(s) :

1. Test results relate only to the specimen tested.

FU HO MAN
Assistant Technical Manager

Checked by : _____

Approved Signatory :
WONG KA MAN
Senior Manager

Form no. : BC_VALVES_CT_WIS 4-52-01_T_dd_01/06/2021



佳力高試驗中心有限公司
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Test Report
Metallic Valves - Shell and Seat Tightness
(BS EN 12266-1 : 2012 Annex A3 and A4)

Date of issue : 30 September 2021

Page 3 of 7 page(s)

Castco LRN : 210817-2666

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Type Silent Check Valve

Sample description : Wafer Type Silent Check Valve

Manufacturer : Val-matic Valve & Manufacturing Corp.

Brand name : Valmatic

Body marking : VAL MATIC CORP.

Model no. : 1400AHKXF

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 17 August 2021

Date of test : 04 September 2021

A) Shell Tightness

Specimen no.	210817-2666-001	210817-2666-002	210817-2666-003	210817-2666-004	210817-2666-005	210817-2666-006
DN (mm)	50	65	80	100	150	200
Inch	2"	2-1/2"	3"	4"	6"	8"
Nominal pressure (PN)	25	25	25	25	25	16
Water temperature (°C)	21.0	21.0	21.0	21.0	21.0	21.0
Apply pressure (bar)	37.5	37.5	37.5	37.5	37.5	24
Test duration (s)	60	60	60	60	60	120
Visually detectable leakage	No	No	No	No	No	No
Requirement	Visually detectable leakage is not permitted					



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Test Report
Metallic Valves - Shell and Seat Tightness
(BS EN 12266-1 : 2012 Annex A3 and A4)

Date of issue : 30 September 2021

Page 4 of 7 page(s)

Castco LRN : 210817-2666

Laboratory test results (con't)

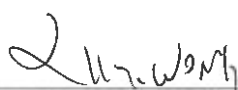
B) Seat Tightness

Specimen no.	210817-2666-001	210817-2666-002	210817-2666-003	210817-2666-004	210817-2666-005	210817-2666-006
DN (mm)	50	65	80	100	150	200
Inch	2"	2-1/2"	3"	4"	6"	8"
Nominal pressure (PN)	25	25	25	25	25	16
Water temperature (°C)	21.0	21.0	21.0	21.0	21.0	21.0
Apply pressure (bar)	27.5	27.5	27.5	27.5	27.5	17.6
Test duration (s)	60	60	60	60	60	120
Leakage rate (mm ³ /s)	0	0	0	0	0	0
Requirement	The leakage rate shall not exceed specified in BS EN 12266-1 : 2012 Annex A.4.3 Table A.5					

Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 12334 : 2001 Clause 5.1 (this specification is not covered by the laboratory's HOKLAS accreditation).
3. For test with qualitative test results, effect of measurement uncertainty has not been taken into account.

Checked by :  **FU HO MAN**
Assistant Technical Manager

Approved Signatory :  **WONG KA MAN**
Senior Manager

Test Report
Metallic Materials - Tensile Test of Metallic Materials
(BS EN ISO 6892-1 : 2009)

Date of issue : 30 September 2021

Page 5 of 7 page(s)

Castco LRN : 210817-2666

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Type Silent Check Valve

Sample description : Wafer Type Silent Check Valve

Nominal pressure (PN) : 16 / 25

Manufacturer : Val-matic Valve & Manufacturing Corp.

Brand name : Valmatic

Body marking : VAL MATIC CORP.

Model no. : 1400AHKXF

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Acceptance standard : BS EN 1561 : 2011 Clause 7.2.1 Table 1 (Grade EN-GJL-250) and Clause 9.1

Laboratory test results

Date of sample received : 17 August 2021

Date of test : 29 September 2021

Tensile Test

Specimen no.	DN (mm)	Type & Prepar'n	Specimen length (mm)	Area (mm ²)	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Position of fracture	Remark
210817-2666-001	50	A, M	200	316.4	--	270	--	--	--
210817-2666-004	100	A, M	200	313.2	--	288	--	--	--
210817-2666-006	200	A, M	200	317.6	--	252	--	--	--

Remark(s) :

- A - Proportional; B - Non - proportional; M - Machined; N - Unmachined;
+ - This measurement is 'invalid' which relates to the position of fracture only.
- Test results relate only to the specimen tested.
- Test results of sample comply with the requirement of BS EN 1561 : 2011 Table 1 (this specification is not covered by the laboratory's HOKLAS accreditation).
- The requirement of BS EN 1561 : 2011 Table 1 : Tensile strength = min. 250MPa.
- The acceptance limit is the same as the tolerance limit (simple acceptance, see Figure A). Only test results out of the tolerance/acceptance limit will be concluded as out-of-tolerance.

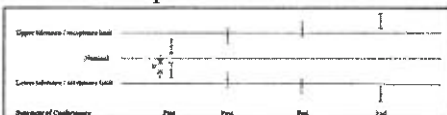


Figure A - Graphical representation of a binary statement - Simple acceptance

Checked by :

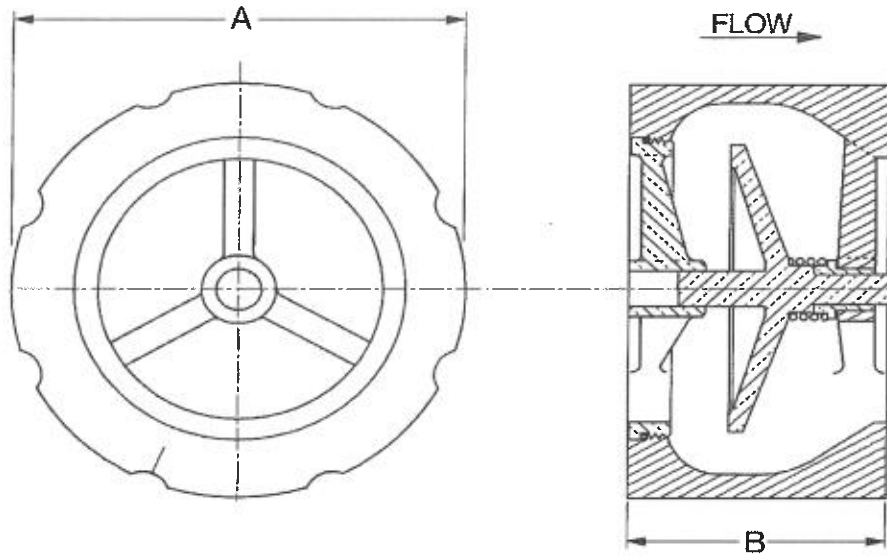
FU HO MAN
Assistant Technical Manager

Approved Signatory :

WONG KA MAN
Senior Manager

Appendix A210817-2666-001210817-2666-002210817-2666-003210817-2666-004210817-2666-005210817-2666-006

Appendix B



Dimensions Figure

End of Report

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2171-001

Page 1 of 2

Castco LRN: 210903-2171

Details as supplied by customer

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN50 Wafer Type Silent Check Valve (Seat Ring)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-001

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by :



Lau Hiu Yat

Assistant Technical Manager

Approved Signatory :



Cheng Chi Fai

Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2171-001

Page 2 of 2

Castco LRN: 210903-2171

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.040
1) Nickel	Ni %	0.38
1) Phosphorus	P %	0.015
1) Lead	Pb %	5.55
1) Sulphur	S %	0.064
1) Antimony	Sb %	0.11
1) Silicon	Si %	<0.002
1) Tin	Sn %	4.64
1) Zinc	Zn %	4.06
1) Copper	Cu %	85.0

End of Report

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2171-001

Page 1 of 1

Related Castco LRN: 210903-2171

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Castco LRN:	210903-2171				
Specimen No. :	210817-2666-001				
Sample Description :	DN50 Wafer Type Silent Check Valve (Seat Ring)				
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC				
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic				
Specification: BS EN 1982:2008, Table 23b, Grade CC491K				Test Results	Within / Exceed limit
Aluminium	Al	0.01 max.	%	<0.003	Within limit
Iron	Fe	0.3 max.	%	0.040	Within limit
Nickel	Ni	2.0 max.	%	0.38	Within limit
Phosphorus	P	0.10 max.	%	0.015	Within limit
Lead	Pb	4.0 to 6.0	%	5.55	Within limit
Sulfur	S	0.10 max.	%	0.064	Within limit
Antimony	Sb	0.25 max.	%	0.11	Within limit
Silicon	Si	0.01 max.	%	<0.002	Within limit
Tin	Sn	4.0 to 6.0	%	4.64	Within limit
Zinc	Zn	4.0 to 6.0	%	4.06	Within limit
Copper	Cu	83.0 to 87.0	%	85.0	Within limit

Remark(s):

I. Test results only relate to the specimen tested.

II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2172-001

Page 1 of 2

Castco LRN: 210903-2172

Details as supplied by customer

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN50 Wafer Type Silent Check Valve (Disc)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-001

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by : _____

Lau Hiu Yat

Assistant Technical Manager

Approved Signatory : _____

Cheng Chi Fai

Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2172-001

Page 2 of 2

Castco LRN: 210903-2172

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.036
1) Nickel	Ni %	0.38
1) Phosphorus	P %	0.013
1) Lead	Pb %	4.98
1) Sulphur	S %	0.059
1) Antimony	Sb %	0.10
1) Silicon	Si %	<0.002
1) Tin	Sn %	4.70
1) Zinc	Zn %	4.11
1) Copper	Cu %	85.5

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2172-001

Page 1 of 1

Related Castco LRN: 210903-2172

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Castco LRN:	210903-2172				
Specimen No. :	210817-2666-001				
Sample Description :	DN50 Wafer Type Silent Check Valve (Disc)				
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC				
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic				
Specification: BS EN 1982:2008, Table 23b, Grade CC491K				Test Results	Within / Exceed limit
Aluminium	Al	0.01 max.	%	<0.003	Within limit
Iron	Fe	0.3 max.	%	0.036	Within limit
Nickel	Ni	2.0 max.	%	0.38	Within limit
Phosphorus	P	0.10 max.	%	0.013	Within limit
Lead	Pb	4.0 to 6.0	%	4.98	Within limit
Sulfur	S	0.10 max.	%	0.059	Within limit
Antimony	Sb	0.25 max.	%	0.10	Within limit
Silicon	Si	0.01 max.	%	<0.002	Within limit
Tin	Sn	4.0 to 6.0	%	4.70	Within limit
Zinc	Zn	4.0 to 6.0	%	4.11	Within limit
Copper	Cu	83.0 to 87.0	%	85.5	Within limit

Remark(s):

I. Test results only relate to the specimen tested.

II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2173-001

Page 1 of 2

Castco LRN: 210903-2173

Details as supplied by customer

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN100 Wafer Type Silent Check Valve (Seat Ring)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-004

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by : _____

Lau Hiu Yat

Assistant Technical Manager

Approved Signatory : _____

Cheng Chi Fai

Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2173-001

Page 2 of 2

Castco LRN: 210903-2173

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.039
1) Nickel	Ni %	0.37
1) Phosphorus	P %	0.012
1) Lead	Pb %	5.17
1) Sulphur	S %	0.059
1) Antimony	Sb %	0.11
1) Silicon	Si %	<0.002
1) Tin	Sn %	4.65
1) Zinc	Zn %	4.09
1) Copper	Cu %	85.4

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2173-001

Page 1 of 1

Related Castco LRN: 210903-2173

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Castco LRN:	210903-2173			
Specimen No. :	210817-2666-004			
Sample Description :	DN100 Wafer Type Silent Check Valve (Seat Ring)			
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC			
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic			
Specification: BS EN 1982:2008, Table 23b, Grade CC491K	Test Results		Within / Exceed limit	
Aluminium Al 0.01 max. %	<0.003		Within limit	
Iron Fe 0.3 max. %	0.039		Within limit	
Nickel Ni 2.0 max. %	0.37		Within limit	
Phosphorus P 0.10 max. %	0.012		Within limit	
Lead Pb 4.0 to 6.0 %	5.17		Within limit	
Sulfur S 0.10 max. %	0.059		Within limit	
Antimony Sb 0.25 max. %	0.11		Within limit	
Silicon Si 0.01 max. %	<0.002		Within limit	
Tin Sn 4.0 to 6.0 %	4.65		Within limit	
Zinc Zn 4.0 to 6.0 %	4.09		Within limit	
Copper Cu 83.0 to 87.0 %	85.4		Within limit	

Remark(s):

I. Test results only relate to the specimen tested.

II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2174-001

Page 1 of 2

Castco LRN: 210903-2174

Details as supplied by customer

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN100 Wafer Type Silent Check Valve (Disc)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-004

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by :

**Lau Hiu Yat**

Assistant Technical Manager

Approved Signatory :

**Cheng Chi Fai**

Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2174-001

Page 2 of 2

Castco LRN: 210903-2174

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.033
1) Nickel	Ni %	0.38
1) Phosphorus	P %	0.010
1) Lead	Pb %	5.18
1) Sulphur	S %	0.058
1) Antimony	Sb %	0.090
1) Silicon	Si %	<0.002
1) Tin	Sn %	4.51
1) Zinc	Zn %	4.07
1) Copper	Cu %	85.5

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2174-001

Page 1 of 1

Related Castco LRN: 210903-2174

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Castco LRN:	210903-2174				
Specimen No. :	210817-2666-004				
Sample Description :	DN100 Wafer Type Silent Check Valve (Disc)				
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC				
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic				
Specification: BS EN 1982:2008, Table 23b, Grade CC491K	Test Results			Within / Exceed limit	
Aluminium Al 0.01 max. %	<0.003			Within limit	
Iron Fe 0.3 max. %	0.033			Within limit	
Nickel Ni 2.0 max. %	0.38			Within limit	
Phosphorus P 0.10 max. %	0.010			Within limit	
Lead Pb 4.0 to 6.0 %	5.18			Within limit	
Sulfur S 0.10 max. %	0.058			Within limit	
Antimony Sb 0.25 max. %	0.090			Within limit	
Silicon Si 0.01 max. %	<0.002			Within limit	
Tin Sn 4.0 to 6.0 %	4.51			Within limit	
Zinc Zn 4.0 to 6.0 %	4.07			Within limit	
Copper Cu 83.0 to 87.0 %	85.5			Within limit	

Remark(s):

I. Test results only relate to the specimen tested.

II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.

Test Report**Chemical Analysis of Copper and Copper Alloy**Date of issue : 14-09-2021
Page 1 of 2Specimen No.: CHEM-210903-2175-001
Castco LRN: 210903-2175**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN200 Wafer Type Silent Check Valve (Seat Ring)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-006

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by : _____


Lau Hiu Yat
Assistant Technical Manager

Approved Signatory : _____


Cheng Chi Fai
Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2175-001

Page 2 of 2

Castco LRN: 210903-2175

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.035
1) Nickel	Ni %	0.39
1) Phosphorus	P %	0.016
1) Lead	Pb %	4.51
1) Sulphur	S %	0.059
1) Antimony	Sb %	0.082
1) Silicon	Si %	<0.002
1) Tin	Sn %	4.09
1) Zinc	Zn %	4.57
1) Copper	Cu %	86.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2175-001

Page 1 of 1

Related Castco LRN: 210903-2175

Name of Customer: Gate Way Valve & Fitting Limited
 Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve
 Contract No.: --
 Customer's Ref. No.: --
 Date of Received by Lab.: 03-09-2021 Testing Period: 13-09-2021

Castco LRN:	210903-2175				
Specimen No. :	210817-2666-006				
Sample Description :	DN200 Wafer Type Silent Check Valve (Seat Ring)				
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC				
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic				
Specification: BS EN 1982:2008, Table 23b, Grade CC491K	Test Results		Within / Exceed limit		
Aluminium Al 0.01 max. %	<0.003		Within limit		
Iron Fe 0.3 max. %	0.035		Within limit		
Nickel Ni 2.0 max. %	0.39		Within limit		
Phosphorus P 0.10 max. %	0.016		Within limit		
Lead Pb 4.0 to 6.0 %	4.51		Within limit		
Sulfur S 0.10 max. %	0.059		Within limit		
Antimony Sb 0.25 max. %	0.082		Within limit		
Silicon Si 0.01 max. %	<0.002		Within limit		
Tin Sn 4.0 to 6.0 %	4.09		Within limit		
Zinc Zn 4.0 to 6.0 %	4.57		Within limit		
Copper Cu 83.0 to 87.0 %	86.1		Within limit		

Remark(s):

- I. Test results only relate to the specimen tested.
- II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.

Test Report**Chemical Analysis of Copper and Copper Alloy**Date of issue : 14-09-2021
Page 1 of 2Specimen No.: CHEM-210903-2176-001
Castco LRN: 210903-2176**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited

Address : Flat A1, 4/F, Galaxy Fty Bldg, 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong

Job Title : WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Sample Description : DN200 Wafer Type Silent Check Valve (Disc)

Specification : BS EN 1982:2008, Table 23b, Grade CC491K

Specimen No. : 210817-2666-006

Sample Identification No.: -- / Model no.: 1400AHKXF / Origin : PRC

Manufacturer : Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic

Location of Works : --

Test Method(s):-

1) In-house ST-Multi-4 (Spark-OES for Gunmetal)

Remark(s):

I. Test results only relate to the specimen tested.

Checked by :



Lau Hiu Yat

Assistant Technical Manager

Approved Signatory :



Cheng Chi Fai

Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2176-001

Page 2 of 2

Castco LRN: 210903-2176

Laboratory test details

Date of Request Confirmed: 03-09-2021

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Iron	Fe %	0.029
1) Nickel	Ni %	0.38
1) Phosphorus	P %	0.015
1) Lead	Pb %	5.20
1) Sulphur	S %	0.065
1) Antimony	Sb %	0.076
1) Silicon	Si %	0.003
1) Tin	Sn %	4.57
1) Zinc	Zn %	4.37
1) Copper	Cu %	85.2

End of Report

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue : 14-09-2021

Specimen No.: CHEM-210903-2176-001

Page 1 of 1

Related Castco LRN: 210903-2176

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: WSD GA renew of "VALMATIC" 1400AHKXF Wafer Typer Silent Check Valve

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-09-2021

Testing Period: 13-09-2021

Castco LRN:	210903-2176				
Specimen No. :	210817-2666-006				
Sample Description :	DN200 Wafer Type Silent Check Valve (Disc)				
Sample Identification No.:	-- / Model no.: 1400AHKXF / Origin : PRC				
Manufacturer :	Val-matic Valve & Manufacturing Corp. / Brand name : Valmatic				
Specification: BS EN 1982:2008, Table 23b, Grade CC491K	Test Results		Within / Exceed limit		
Aluminium Al 0.01 max. %	<0.003		Within limit		
Iron Fe 0.3 max. %	0.029		Within limit		
Nickel Ni 2.0 max. %	0.38		Within limit		
Phosphorus P 0.10 max. %	0.015		Within limit		
Lead Pb 4.0 to 6.0 %	5.20		Within limit		
Sulfur S 0.10 max. %	0.065		Within limit		
Antimony Sb 0.25 max. %	0.076		Within limit		
Silicon Si 0.01 max. %	0.003		Within limit		
Tin Sn 4.0 to 6.0 %	4.57		Within limit		
Zinc Zn 4.0 to 6.0 %	4.37		Within limit		
Copper Cu 83.0 to 87.0 %	85.2		Within limit		

Remark(s):

I. Test results only relate to the specimen tested.

II. Test results of the specimen are in compliance with the chemical requirements of BS EN 1982:2008, Table 23b, Grade CC491K.