

Summary of Test Results

Reference no. : BC-SUMMARY-2019-40

Customer : Gate Way Valve & Fitting Ltd.

Address : Flat A2, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Sample description : Cast Iron Globe Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : (DN) PN16 CI TOYO ←

Model no. : 510SHHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Test standard : BS EN 13789 : 2010 / WIS 4-52-01 / BS EN 1561 : 2011 / BS EN 1982 : 2008 / BS EN 10088-1 : 2014

Test period : 21 February to 14 June 2019

A) Sample List

DN (mm)	Specimen no.
65	BC0190131-022-MISL
80	BC0190131-023-MISL
100	BC0190131-024-MISL
150	BC0190131-025-MISL
200	BC0190131-026-MISL

B) Test Item**1) Dimensions Check (BS EN 13789 : 2010 Clause 4.1.3)**

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-021-MISL
80	Passed	
100	Passed	
150	Passed	
200	Passed	

2) Coating Thickness Test (WIS 4-52-01 Appendix B)

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-021-MISL
80	Passed	
100	Passed	
150	Passed	
200	Passed	

3) Hydrostatic Strength Test (BS EN 13789 : 2010 Clause 5.1)

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-021-MISL
80	Passed	
100	Passed	
150	Passed	
200	Passed	

Summary of Test Results

Reference no. : BC-SUMMARY-2019-40

B) Test Item (con't)

4) Tensile Properties (BS EN 1561 : 2011 Clause 7.2 and 9.1 Table 1 Grade EN-GJL-250)

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-021-MISL
100	Passed	
200	Passed	

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

DN (mm)	Test results	Castco LRN
65	Passed	MS0190213-21
100	Passed	MS0190213-25
200	Passed	MS0190213-29

6) Chemical Composition-Seat Ring (BS EN 10088-1 : 2014, Table 2, Grade 1.4401 (316))

DN (mm)	Test results	Castco LRN
65	Passed	MS0190213-22
100	Passed	MS0190213-26
200	Passed	MS0190213-30

7) Chemical Composition-Stem (BS EN 10088-1 : 2014, Table 5, Grade 1.4021 (420))

DN (mm)	Test results	Castco LRN
65	Passed	MS0190213-23
100	Passed	MS0190213-27
200	Passed	MS0190213-31


8) Chemical Composition-Stem (BS EN 10088-1 : 2014, Table 2, Grade 1.4401 (316))

DN (mm)	Test results	Castco LRN
65	Passed	MS0190213-24
100	Passed	MS0190213-28
200	Passed	MS0190213-32

Prepare by : _____
Date : 27 June 2019


FU HO MAN
Assistant Technical Manager

Review by : _____
Date : 27 June 2019


WONG KA MAN
Senior Manager



Test Report
Dimensions Check of Globe Valves
(BS EN 13789 : 2010 Clause 4.1.3)

Date of issue : 14 June 2019

Page 1 of 8 page(s)

Castco LRN : BC0190131-021-MISL

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A2, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : Toyo Valve Testing for WSD Approval

Sample description : Cast Iron Globe Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : (DN) PN16 CI TOYO ←

Model no. : 510SHHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 21 May 2019

Date of test : 13 June 2019

Specimen no.	BC0190131-022-MISL	BC0190131-023-MISL	BC0190131-024-MISL	BC0190131-025-MISL	BC0190131-026-MISL	
DN (mm)	65	80	100	150	200	
Face-to-face (mm)	Measured mean value	216	241	292	357	496
	Requirement	214 to 218	239 to 243	289 to 295	353 to 359	492 to 498
Outside diameter of flange (mm)	Measured mean value	186	201	220	285	340
	Requirement	185	200	220	285	340
Diameter of bolt circle (mm)	Measured mean value	145	160	181	242	295
	Requirement	145	160	180	240	295
Diameter of bolt hole & Bolts number (mm & no.)	Measured mean value	19.26 - 4	19.36 - 8	19.84 - 8	23.68 - 8	23.42 - 12
	Requirement	19 to 20.5 - 4	19 to 20.5 - 8	19 to 20.5 - 8	23 to 24.5 - 8	23 to 24.5 - 12
Flange thickness (mm)	Measured mean value	19.66	19.53	23.83	25.14	30.00
	Requirement	17 to 24	19 to 26	21 to 28	23 to 30	27 to 34
Inside diameter of the body end port (mm)	Measured mean value	64	80	100	150	201
	Requirement	min. 63	min. 76	min. 100	min. 150	min. 200

Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 13789 : 2010 Clause 4.1.3. (Flange to BS EN 1092-2 PN16)

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

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

Form no. : BC_GLOBE VALVE_DIM_BSEN13789_2010_T_dd_12/02/2019

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Test Report
Coating Thickness Test of Globe Valves
(WIS 4-52-01 Appendix B)

Date of issue : 14 June 2019

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Castco LRN : BC0190131-021-MISL

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A2, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : Toyo Valve Testing for WSD Approval

Sample description : Cast Iron Globe Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : (DN) PN16 CI TOYO ←

Model no. : 510SHHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 21 May 2019

Date of test : 13 June 2019

Specimen no.	BC0190131-022-MISL	BC0190131-023-MISL	BC0190131-024-MISL	BC0190131-025-MISL	BC0190131-026-MISL	
DN (mm)	65	80	100	150	200	
Measured value of coating thickness (µm)	1	588	440	385	488	773
	2	481	450	263	439	651
	3	620	622	472	282	421
	4	481	551	609	348	525
	5	448	347	260	382	790
	6	511	370	305	622	597
	7	740	517	291	412	648
	8	383	409	449	431	596
	9	442	313	452	289	591
	10	513	544	516	758	692
	11	483	274	341	547	575
	12	409	298	456	581	639
	13	443	323	434	568	823
	14	730	272	396	501	658
	15	501	317	462	500	719
Mean	518.2	403.1	406.1	476.5	646.5	

Remark(s) :

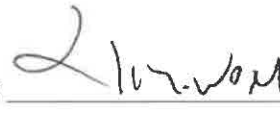
1. Test results relate only to the specimen tested.

Checked by : _____



FU HO MAN
Assistant Technical Manager

Certified by : _____



WONG KA MAN
Senior Manager



Test Report
Hydrostatic Strength Test of Globe Valves
(BS EN 13789 : 2010 Clause 5.1)

Date of issue : 14 June 2019

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Castco LRN : BC0190131-021-MISL

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A2, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K.

Contract no. : - -

Job title : Toyo Valve Testing for WSD Approval

Sample description : Cast Iron Globe Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : (DN) PN16 CI TOYO ←

Model no. : 510SHHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 21 May 2019

Date of test : 14 June 2019

A) Shell Tightness (BS EN 12266-1 : 2012 Annex A.3)

Specimen no.	BC0190131-022-MISL	BC0190131-023-MISL	BC0190131-024-MISL	BC0190131-025-MISL	BC0190131-026-MISL
DN (mm)	65	80	100	150	200
Apply pressure (bar)	24	24	24	24	24
Test duration (s)	60	60	60	60	120
Visually detectable leakage	No	No	No	No	No
Requirement	Visually detectable leakage is not permitted				
Test results	Passed	Passed	Passed	Passed	Passed

Test Report
Hydrostatic Strength Test of Globe Valves
(BS EN 13789 : 2010 Clause 5.1)

Date of issue : 14 June 2019

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Castco LRN : BC0190131-021-MISL

Laboratory test results (con't)

B) Seat Tightness (BS EN 12266-1 : 2012 Annex A.4)

Specimen no.	BC0190131-022-MISL	BC0190131-023-MISL	BC0190131-024-MISL	BC0190131-025-MISL	BC0190131-026-MISL
DN (mm)	65	80	100	150	200
Side	A	A	A	A	A
Apply pressure (bar)	17.6	17.6	17.6	17.6	17.6
Test duration (s)	60	60	60	60	120
Leakage rate (mm ³ /s)	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				
Test results	Passed	Passed	Passed	Passed	Passed

Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 12266-1 : 2012 Clause 4 Annex A.

Checked by :

 **FU HO MAN**
Assistant Technical Manager

Certified by :

 **WONG KA MAN**
Senior Manager

Test Report

Spheroidal Graphite Cast Iron - Tensile Properties
(BS EN 1561 : 2011 Clause 7.2 and 9.1 Table 1)

Date of issue : 14 June 2019

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Castco LRN : BC0190131-021-MISL

Details as supplied by customer

Customer : Gate Way Valve & Fitting Ltd.

Customer's ref. no. : - -

Address : Flat A2, 4/F., Galaxy Factory Building, 25-27 Luk Hop Street, San Po Kong, Kowloon, H. K. Contract no. : - -

Job title : Toyo Valve Testing for WSD Approval

Sample description : Cast Iron Globe Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : (DN) PN16 CI TOYO ←

Model no. : 510SHHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 31 January 2019

Date of test : 23 February 2019

Specimen no.	BC0190131-022-MISL	BC0190131-024-MISL	BC0190131-026-MISL	
DN (mm)	65	100	200	
Steel grade	EN-GJL-250			
Total specimen length (mm)	153	155	155	
Area (mm ²)	201.8	200.6	202.3	
Tensile (MPa)	Strength	314	289	298
	Requirement	250 to 350		
Test results	Passed	Passed	Passed	

Remark(s) :

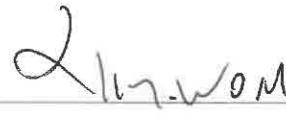
1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 1561 : 2011 Table 1.

Checked by :



FU HO MAN
Assistant Technical Manager

Certified by :



WONG KA MAN
Senior Manager

Test Report
Dimensions Check of Globe Valves
(BS EN 13789 : 2010 Clause 4.1.3)

Date of issue : 14 June 2019
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Castco LRN : BC0190131-021-MISL

Appendix A



BC0190131-022-MISL



BC0190131-023-MISL

Test Report
Dimensions Check of Globe Valves
(BS EN 13789 : 2010 Clause 4.1.3)

Date of issue : 14 June 2019
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Castco LRN : BC0190131-021-MISL

Appendix B



BC0190131-024-MISL



BC0190131-025-MISL

Test Report
Dimensions Check of Globe Valves
(BS EN 13789 : 2010 Clause 4.1.3)

Date of issue : 14 June 2019
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Castco LRN : BC0190131-021-MISL

Appendix C



BC0190131-026-MISL

End of Report