

### Summary of Test Results

Reference no. : BC-SUMMARY-2019-21

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 Y-strainer

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : TOYO (DN) PN16 CI →

Model no. : 381EHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Test standard : BS EN 1092-2 : 1997 / BS EN 12266-1 : 2012 / BS EN 1561 : 2011 / BS EN 10088-1 : 2014

Test period : 22 February to 08 April 2019

#### A) Sample List

DN (mm)	Specimen no.
65	BC0190131-036-MISL
80	BC0190131-037-MISL
100	BC0190131-038-MISL
125	BC0190131-039-MISL
150	BC0190131-040-MISL
200	BC0190131-041-MISL
250	BC0190131-042-MISL
300	BC0190131-043-MISL

#### B) Test Item

##### 1) Dimensions Check (In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-035-MISL
80	Passed	
100	Passed	
125	Passed	
150	Passed	
200	Passed	
250	Passed	
300	Passed	

##### 2) Hydrostatic Strength Test (BS EN 12266-1 : 2012 Clause 4 Annex A)

DN (mm)	Test results	Castco LRN
65	Passed	BC0190131-035-MISL
80	Passed	
100	Passed	
125	Passed	
150	Passed	
200	Passed	
250	Passed	
300	Passed	

Summary of Test Results

Reference no. : BC-SUMMARY-2019-21

B) Test Item (con't)

3) 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	BC0190131-035-MISL
100	Passed	
125	Passed	
200	Passed	
300	Passed	

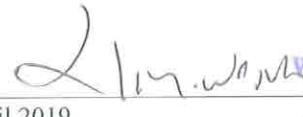
5) Chemical Composition-Screen (BS EN 10088-1 : 2014 Table 2 Grade 1.4301 (304))

DN (mm)	Test results	Castco LRN
65	Passed	MS0190213-43
100	Passed	MS0190213-44
125	Passed	MS0190213-45
200	Passed	MS0190213-46
300	Passed	MS0190213-47

Prepare by : \_\_\_\_\_  
Date : 11 April 2019

 **FU HO MAN**  
Assistant Technical Manager

Review by : \_\_\_\_\_  
Date : 11 April 2019

 **WONG KA MAN**  
Senior Manager

Test Report  
Dimensions Check of Y-strainers  
(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019

Page 1A of 8 page(s)

Castco LRN : BC0190131-035-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 Y-strainer

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : TOYO (DN) PN16 CI →

Model no. : 381EHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 26 March 2019

Date of test : 03 to 04 April 2019 &  
13 June 2019

Specimen no.	BC0190131-036-MISL	BC0190131-037-MISL	BC0190131-038-MISL	BC0190131-039-MISL	BC0190131-040-MISL	BC0190131-041-MISL	BC0190131-042-MISL	BC0190131-043-MISL	
DN (mm)	65	80	100	125	150	200	250	300	
H (mm)	Measured mean value	175	200	235	290	325	400	515	570
	Manufacturer requirement	172 to 180	195 to 203	235 to 245	287 to 297	315 to 325	394 to 404	511 to 521	563 to 573
L (mm)	Measured mean value	292	311	348	399	481	598	732	851
	Manufacturer requirement	287 to 293	307 to 313	347 to 353	397 to 403	477 to 483	596 to 604	726 to 734	845 to 855
Outside diameter of flange (mm)	Measured mean value	186	200	221	251	287	341	406	462
	Requirement	185	200	220	250	285	340	405	460
Diameter of bolt circle (mm)	Measured mean value	145	160	180	210	240	296	355	410
	Requirement	145	160	180	210	240	295	355	410
Diameter of bolt hole & Bolts number (mm & no.)	Measured mean value	19.14 - 4	19.03 - 8	19.08 - 8	19.53 - 8	23.23 - 8	23.17 - 12	28.46 - 12	28.30 - 12
	Requirement	19 to 20.5 - 4	19 to 20.5 - 8	19 to 20.5 - 8	19 to 20.5 - 8	23 to 24.5 - 8	23 to 24.5 - 12	28 to 29.5 - 12	28 to 29.5 - 12
Flange thickness (mm)	Measured mean value	18.97	23.04	22.86	25.17	26.33	29.48	31.87	32.16
	Requirement	17 to 24	19 to 26	21 to 28	23 to 30	23 to 30	27 to 34	29 to 36	29 to 36

Remark(s) :

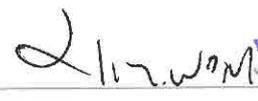
1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 1092-2 : 1997 Table 9.
3. This page no. 1A of test report supersedes page no. 1 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Checked by :



LIU KA WAI  
Technical Manager

Certified by :



WONG KA MAN  
Senior Manager

Form no. : BC\_DIM\_IN-HOUSE\_T\_dd 21/11/2018

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Test Report  
Hydrostatic Strength Test of Y-strainers  
(BS EN 12266-1 : 2012 Clause 4 Annex A)

Date of issue : 13 June 2019

Page 2A of 8 page(s)

Castco LRN : BC0190131-035-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 Y-strainer

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : TOYO (DN) PN16 CI →

Model no. : 381EHK

Origin : PRC

Sample submitted by : Gate Way Valve & Fitting Ltd.

Laboratory test results

Date of sample received : 26 March 2019

Date of test : 04 to 08 April 2019

Specimen no.	BC0190131-036-MISL	BC0190131-037-MISL	BC0190131-038-MISL	BC0190131-039-MISL	BC0190131-040-MISL	BC0190131-041-MISL	BC0190131-042-MISL	BC0190131-043-MISL
DN (mm)	65	80	100	125	150	200	250	300
Apply pressure (bar)	24	24	24	24	24	24	24	24
Test duration (s)	60	60	60	60	60	120	120	120
Visually detectable leakage	0	0	0	0	0	0	0	0
Requirement	Visually detectable leakage is not permitted							
Test results	Passed	Passed	Passed	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.
3. This page no. 2A of test report supersedes page no. 2 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Checked by : **LIU KA WAI**  
Technical Manager

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

## Test Report

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

Date of issue : 13 June 2019

Page 3A of 8 page(s)

Castco LRN : BC0190131-035-MISL

Details as supplied by customer

Customer : Gate Way Valve &amp; 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 Y-strainer

Nominal pressure (PN) : 16

Manufacturer : Kitz Corporation

Brand name : Toyo

Body marking : TOYO (DN) PN16 CI →

Model no. : 381EHK

Origin : PRC

Sample submitted by : Gate Way Valve &amp; Fitting Ltd.

Laboratory test results

Date of sample received : 31 January 2019

Date of test : 23 February 2019

Specimen no.	BC0190131-036-MISL	BC0190131-038-MISL	BC0190131-039-MISL	BC0190131-041-MISL	BC0190131-043-MISL	
DN (mm)	65	100	125	200	300	
Cast Iron grade	EN-GJL-250					
Total specimen length (mm)	150	154	151	151	153	
Area (mm <sup>2</sup> )	200.6	202.1	201.3	200.8	200.8	
Tensile (MPa)	Strength	345	299	308	326	285
	Requirement	250 to 350				
Test results	Passed	Passed	Passed	Passed	Passed	

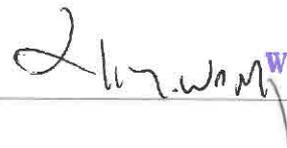
## Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 1561 : 2011 Table 1.
3. This page no. 3A of test report supersedes page no. 3 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Checked by :


LIU KA WAI  
Technical Manager

Certified by :


WONG KA MAN  
Senior Manager

## Test Report

## Dimensions Check of Y-strainers

(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019

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Castco LRN : BC0190131-035-MISL

Appendix ABC0190131-036-MISLBC0190131-037-MISL

## Remark(s) :

1. This page no. 4A of test report supersedes page no. 4 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Form no. : BC\_DIM\_IN-HOUSE\_T\_dd\_21/11/2018

## Test Report

Dimensions Check of Y-strainers

(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019

Page 5A of 8 page(s)

Castco LRN : BC0190131-035-MISL

Appendix BBC0190131-038-MISLBC0190131-039-MISL

## Remark(s) :

1. This page no. 5A of test report supersedes page no. 5 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Form no. : BC\_DIM\_IN-HOUSE\_T\_dd\_21/11/2018

Test Report  
Dimensions Check of Y-strainers  
(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019  
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Castco LRN : BC0190131-035-MISL

Appendix C



BC0190131-040-MISL



BC0190131-041-MISL

Remark(s):

1. This page no. 6A of test report supersedes page no. 6 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Test Report  
Dimensions Check of Y-strainers  
(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019

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Castco LRN : BC0190131-035-MISL

Appendix DBC0190131-042-MISLBC0190131-043-MISL

## Remark(s):

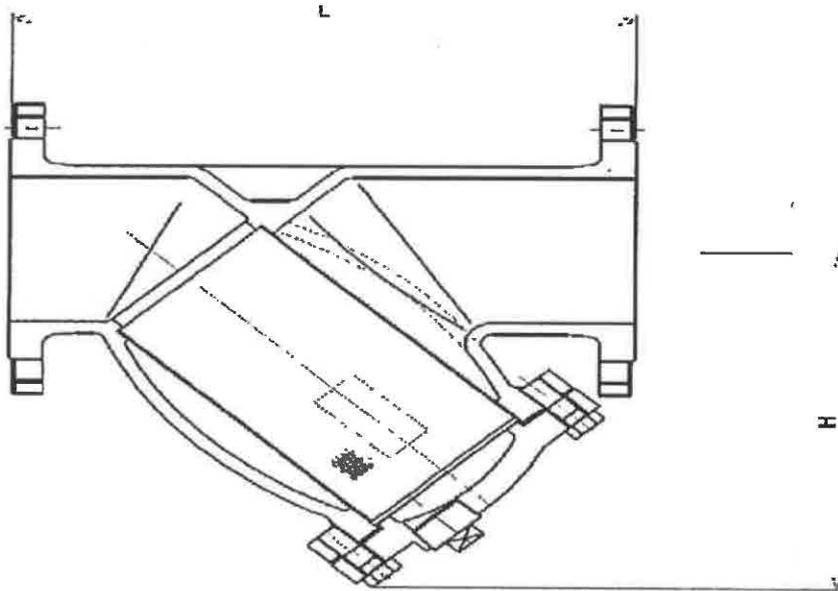
1. This page no. 7A of test report supersedes page no. 7 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

Test Report  
Dimensions Check of Y-strainers  
(In-house method and BS EN 1092-2 : 1997 Clause 5 Table 9)

Date of issue : 13 June 2019

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Castco LRN : BC0190131-035-MISL

Appendix EDimensions Figure

## Remark(s):

1. This page no. 8A of test report supersedes page no. 8 of the previous test report of Castco LRN : BC0190131-035-MISL issued on 11 April 2019.

End of Report