

## Summary of Test Results

Reference no. : BC-SUMMARY-2018-65

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 : SS316 Stainless Steel Ball Float Valve  
 Nominal pressure (PN) : 16  
 Manufacturer : GENWEC WASHROOM, S.L.  
 Brand name : VALVULAS CT  
 Body marking : AISI 316  
 Model no. : 200B-RPH  
 Origin : Spain  
 Sample submitted by : Gate Way Valve & Fitting Ltd.  
 Test standard : BS EN 1092-1 : 2007 / BS 1212 : Part 1 : 1990  
 Test period : 02 to 18 May 2018

## A) Sample List

DN (mm)	Specimen no.
150	BC0180427-002-MISL

## B) Test Item

## 1) Dimensions Check (BS EN 1092-1 : 2008 Clause 5.6 Table 13)

DN (mm)	Test results	Castco LRN
150	Passed	BC0180427-001-MISL

## 2) Hydraulic Pressure and Shut-off Pressure Test (BS 1212 : Part 1 : 1990 Clause 24 Appendix A)

DN (mm)	Test results	Castco LRN
150	Passed	BC0180427-001-MISL

## 3) Chemical Composition - Body (BS EN 10088-1 : 2014 Table 2 Grade 1.4401 (316))

DN (mm)	Test results	Castco LRN
150	Passed	MS0180503-1

## 4) Chemical Composition - Seat (BS EN 10088-1 : 2014 Table 2 Grade 1.4401 (316))


DN (mm)	Test results	Castco LRN
150	Passed	MS0180503-2


## 5) Chemical Composition - Float Arm (BS EN 10088-1 : 2014 Table 2 Grade 1.4401 (316))

DN (mm)	Test results	Castco LRN
150	Passed	MS0180503-3

## 6) Chemical Composition - Float Ball (BS EN 10088-1 : 2014 Table 2 Grade 1.4401 (316))

DN (mm)	Test results	Castco LRN
150	Passed	MS0180503-4

 Prepare by :  **FU HO MAN**  
 Assistant Technical Manager  
 Date : 25 May 2018

 Review by :  **LIU KA WAI**  
 Technical Manager  
 Date : 25 May 2018

**Test Report  
Dimensions Check of Ball Float Valves  
(BS EN 1092-1 : 2007 Clause 5.6 Table 13)**

Date of issue : 19 May 2018

Page 1 of 3 page(s)

Castco LRN : BC0180427-001-MISL

**Details as supplied by customer**

Customer : Gate Way Valve &amp; 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 : - -

Sample description : SS316 Stainless Steel Ball Float Valve

Nominal pressure (PN) : 16

Manufacturer : GENWEC WASHROOM, S.L.

Brand name : VALVULAS CT

Body marking : AISI 316

Model no. : 200B-RPH

Origin : Spain

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

**Laboratory test results**

Date of sample received : 27 April 2018

Date of test : 02 May 2018

Specimen no.		BC0180427-002-MISL
DN (mm)		150
Outside diameter of flange (mm)	Measured mean value	285
	Requirement	285 (±2)
Diameter of bolt circle (mm)	Measured mean value	241
	Requirement	240 (±1)
Diameter of bolt hole & Bolts number (mm & no.)	Measured mean value	21.70 - 8
	Requirement	22 (±1) - 8
Flange thickness (mm)	Measured mean value	23.45
	Requirement	24 (±1.5)
Test results		Passed

Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 1092-1 : 2007 Table 13.

Checked by : \_\_\_\_\_


**FU HO MAN**  
Assistant Technical Manager

Certified by : \_\_\_\_\_


**LIU KA WAI**  
Technical Manager

## Test Report

Hydraulic Pressure and Shut-off Pressure Test of Float Operated Valves  
(BS 1212 : Part 1 : 1990 Clause 24 Appendix A)

Date of issue : 19 May 2018

Page 2 of 3 page(s)

Castco LRN : BC0180427-001-MISL

Details as supplied by customer

Customer : Gate Way Valve &amp; 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 : - -

Sample description : SS316 Stainless Steel Ball Float Valve

Nominal pressure (PN) : 16

Manufacturer : GENWEC WASHROOM, S.L.

Brand name : VALVULAS CT

Body marking : AISI 316

Model no. : 200B-RPH

Origin : Spain

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

Laboratory test results

Date of sample received : 27 April 2018

Date of test : 05 May 2018

A. Hydraulic Pressure Test (BS 1212 : Part 1 : 1990 Clause 24.1)

Specimen no.	BC0180427-002-MISL
DN (mm)	150
Apply pressure (bar)	20
Maintain period (min)	15
Observation	No leakage was observed
Requirement	Without leaking or sweating
Test results	Passed

B. Shut-off Pressure Test (BS 1212 : Part 1 : 1990 Clause 24.2)

Specimen no.	BC0180427-002-MISL
DN (mm)	150
Apply pressure (bar)	14
Observation	No leakage was observed
Requirement	Shall not leak
Test results	Passed

## Remark(s) :

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS 1212 : Part 1 : 1990 Clause 24.

Checked by :

  
**FU HO MAN**  
 Assistant Technical Manager

Certified by :

  
**LIU KA WAI**  
 Technical Manager

Form no. : BC\_FLOAT VALVE\_HYD(BS1212-1-1990)\_T\_dd 16/03/2018

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Test Report  
Dimensions Check of Ball Float Valves  
(BS EN 1092-1 : 2007 Clause 5.6 Table 13)

Date of issue : 19 May 2018

Page 3 of 3 page(s)

Castco LRN : BC0180427-001-MISL

Appendix A



BC0180427-002-MISL

End of Report

**Test Report****Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 1 of 2

Castco LRN: MS0180503-1

**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited  
Address : Flat A1, 4/F., Galaxy Factory Bldg., 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong  
Job Title : --  
Contract No. : --  
Customer's Ref. No. : --

**Sample details as supplied by customer**

Date Sampled : --  
Date of Sample Received : 03-05-2018  
Test Period : 08-05-2018 to 18-05-2018  
Sample Description : DN150 SS316 Stainless Steel Ball Float Valve (Body)  
Specification : BS EN 10088-1: 2014, Table 2, Grade 1.4401 (316)  
Specimen No. : BC0180427-002-MISL  
Location of Work : -- / Origin: Spain  
Sample Identification No. : -- / Model no.: 200B-RPH / Brand Name: VALVULAS CT  
Manufacturer : GENWEC WASHROOM, S. L.


**Test Method(s):-**

- 1) BS EN ISO 15350 : 2010
- 2) In House Method: ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010
- 4) In House Method: ST-Nb-1(ICP-OES)
- 5) In-house ST-CEV (By calculation)


**Remarks:**

- I. Test results only relate to the specimen tested.

Checked by :

  
Cheng Chi Fai  
Senior Manager

Approved Signatory :

  
LEE Stephen Shu Hang  
Ph.D.  
Technical Director

## Test Report

## Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 2 of 2

Castco LRN: MS0180503-1

Chemical Analysis		Result
1) Total Carbon Content	C %	0.022
1) Total Sulfur Content	S %	0.0007
2) Chromium	Cr %	16.80
2) Copper	Cu %	--
2) Manganese	Mn %	0.919
2) Molybdenum	Mo %	2.01
2) Nickel	Ni %	10.05
2) Phosphorus	P %	0.031
2) Silicon	Si %	0.473
2) Titanium	Ti %	--
2) Vanadium	V %	--
3) Nitrogen	N %	0.052
4) Niobium	Nb %	--
5) Carbon Equivalent Value	$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$ (%)	--

End of Report

Form No.: CHM Steel-1 T dd 16/12/2015

## Appendix A

### Summary of Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 1 of 1

Castco LRN: MS0180503-1

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-05-2018

Testing Period:

08-05-2018 to 18-05-2018

Castco LRN:	MS0180503-1		
Sample I.D. No.:	-- / Model no.: 200B-RPH / Brand Name: VALVULAS CT		
Sample Description :	DN150 SS316 Stainless Steel Ball Float Valve (Body)		
Location of Work :	-- / Origin: Spain		
Specimen No.:	BC0180427-002-MISL		
Manufacturer:	GENWEC WASHROOM, S. L.		
Specification refer to BS EN 10088-1: 2014, Table 2, Grade 1.4401	Compliance (Pass/Fail) <sup>(b)</sup>		
Carbon	C	0.07 max.	% Pass
Sulfur	S	0.015 max.	% Pass
Chromium	Cr	16.5 to 18.5	% Pass
Copper	Cu	--	% --
Manganese	Mn	2.00 max.	% Pass
Molybdenum	Mo	2.00 to 2.50	% Pass
Nickel	Ni	10.0 to 13.0	% Pass
Phosphorus	P	0.045 max.	% Pass
Silicon	Si	1.00 max.	% Pass
Titanium	Ti	--	% --
Vanadium	V	--	% --
Nitrogen	N	0.10 max.	% Pass
Niobium	Nb	--	% --
Carbon			
Equivalent	CEV	--	% --

Remark:

a. Test results only relate to the specimen tested.

b. Legends: Pass/Fail - Test results of the specimen are in compliance/~~not in compliance~~ with the chemical requirements of specification.

**Test Report****Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 1 of 2

Castco LRN: MS0180503-2

**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited  
Address : Flat A1, 4/F., Galaxy Factory Bldg., 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong  
Job Title : --  
Contract No. : --  
Customer's Ref. No. : --

**Sample details as supplied by customer**

Date Sampled : --  
Date of Sample Received : 03-05-2018  
Test Period : 08-05-2018 to 18-05-2018  
Sample Description : DN150 SS316 Stainless Steel Ball Float Valve (Seat)  
Specification : BS EN 10088-1: 2014, Table 2, Grade 1.4401 (316)  
Specimen No. : BC0180427-002-MISL  
Location of Work : -- / Origin: Spain  
Sample Identification No. : -- / Model no.: 200B-RPH / Brand Name: VALVULAS CT  
Manufacturer : GENWEC WASHROOM, S. L.

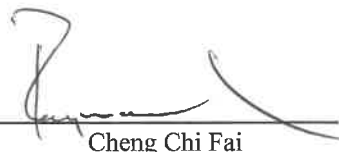
**Test Method(s):-**

- 1) BS EN ISO 15350 : 2010
- 2) In House Method: ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010
- 4) In House Method: ST-Nb-1(ICP-OES)
- 5) In-house ST-CEV (By calculation)

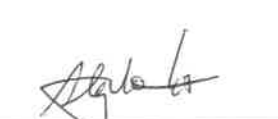
**Remarks:**

- I. Test results only relate to the specimen tested.

Checked by :

  
Cheng Chi Fai  
Senior Manager

Approved Signatory :

  
LEE Stephen Shu Hang  
Ph.D.  
Technical Director



## Test Report

### Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 2 of 2

Castco LRN: MS0180503-2

Chemical Analysis		Result
1) Total Carbon Content	C %	0.020
1) Total Sulfur Content	S %	0.0006
2) Chromium	Cr %	16.76
2) Copper	Cu %	--
2) Manganese	Mn %	0.910
2) Molybdenum	Mo %	2.01
2) Nickel	Ni %	10.04
2) Phosphorus	P %	0.031
2) Silicon	Si %	0.474
2) Titanium	Ti %	--
2) Vanadium	V %	--
3) Nitrogen	N %	0.050
4) Niobium	Nb %	--
5) Carbon Equivalent Value	$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$ (%)	--

End of Report

Form No.: CHM Steel-1 T dd 16/12/2015

## Appendix A

### Summary of Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 1 of 1

Castco LRN: MS0180503-2

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-05-2018

Testing Period:

08-05-2018 to 18-05-2018

Castco LRN:	MS0180503-2		
Sample I.D. No.:	-- / Model no.: 200B-RPH / Brand Name: VALVULAS CT		
Sample Description :	DN150 SS316 Stainless Steel Ball Float Valve (Seat)		
Location of Work :	-- / Origin: Spain		
Specimen No.:	BC0180427-002-MISL		
Manufacturer:	GENWEC WASHROOM, S. L.		
Specification refer to BS EN 10088-1: 2014, Table 2, Grade 1.4401	Compliance (Pass/Fail) <sup>(b)</sup>		
Carbon	C	0.07 max.	% Pass
Sulfur	S	0.015 max.	% Pass
Chromium	Cr	16.5 to 18.5	% Pass
Copper	Cu	--	% --
Manganese	Mn	2.00 max.	% Pass
Molybdenum	Mo	2.00 to 2.50	% Pass
Nickel	Ni	10.0 to 13.0	% Pass
Phosphorus	P	0.045 max.	% Pass
Silicon	Si	1.00 max.	% Pass
Titanium	Ti	--	% --
Vanadium	V	--	% --
Nitrogen	N	0.10 max.	% Pass
Niobium	Nb	--	% --
Carbon Equivalent	CEV	--	% --

Remark:

a. Test results only relate to the specimen tested.

b. Legends: Pass/Fail - Test results of the specimen are in compliance/~~not in compliance~~ with the chemical requirements of specification.

**Test Report  
Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 1 of 2

Castco LRN: MS0180503-3

**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited  
Address : Flat A1, 4/F., Galaxy Factory Bldg., 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong  
Job Title : --  
Contract No. : --  
Customer's Ref. No. : --

**Sample details as supplied by customer**

Date Sampled : --  
Date of Sample Received : 03-05-2018  
Test Period : 08-05-2018 to 18-05-2018  
Sample Description : DN150 SS316 Stainless Steel Ball Float Valve (Float Arm)  
Specification : BS EN 10088-1: 2014, Table 2, Grade 1.4401 (316)  
Specimen No. : BC0180427-002-MISL  
Location of Work : -- / Origin: Spain  
Sample Identification No. : -- / Model no.: 200B-RPH / Brand Name: VALVULAS CT  
Manufacturer : GENWEC WASHROOM, S. L.

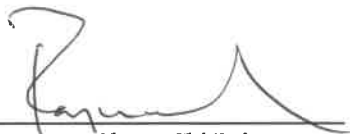
**Test Method(s):-**

- 1) BS EN ISO 15350 : 2010
- 2) In House Method: ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010
- 4) In House Method: ST-Nb-1(ICP-OES)
- 5) In-house ST-CEV (By calculation)

**Remarks:**

- I. Test results only relate to the specimen tested.

Checked by :

**Cheng Chi Fai**  
Senior Manager

Approved Signatory :

**LEE Stephen Shu Hang**  
Ph.D.  
Technical Director

**Test Report**  
**Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 2 of 2

Castco LRN: MS0180503-3

Chemical Analysis		Result
1) Total Carbon Content	C %	0.020
1) Total Sulfur Content	S %	0.0007
2) Chromium	Cr %	16.77
2) Copper	Cu %	--
2) Manganese	Mn %	0.909
2) Molybdenum	Mo %	2.01
2) Nickel	Ni %	10.01
2) Phosphorus	P %	0.031
2) Silicon	Si %	0.468
2) Titanium	Ti %	--
2) Vanadium	V %	--
3) Nitrogen	N %	0.052
4) Niobium	Nb %	--
5) Carbon Equivalent Value	$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$ (%)	--

**End of Report**

Form No.: CHM Steel-1 T dd 16/12/2015

## Appendix A

### Summary of Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 1 of 1

Castco LRN: MS0180503-3

Name of Customer: Gate Way Valve & Fitting Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-05-2018

Testing Period:

08-05-2018 to 18-05-2018

Castco LRN:	MS0180503-3		
Sample I.D. No.:	-- / Model no.: 200B-RPH / Brand Name: VALVULAS CT		
Sample Description :	DN150 SS316 Stainless Steel Ball Float Valve (Float Arm)		
Location of Work :	-- / Origin: Spain		
Specimen No.:	BC0180427-002-MISL		
Manufacturer:	GENWEC WASHROOM, S. L.		
Specification refer to BS EN 10088-1: 2014, Table 2, Grade 1.4401	Compliance (Pass/Fail) <sup>(b)</sup>		
Carbon	C	0.07 max.	% Pass
Sulfur	S	0.015 max.	% Pass
Chromium	Cr	16.5 to 18.5	% Pass
Copper	Cu	--	% --
Manganese	Mn	2.00 max.	% Pass
Molybdenum	Mo	2.00 to 2.50	% Pass
Nickel	Ni	10.0 to 13.0	% Pass
Phosphorus	P	0.045 max.	% Pass
Silicon	Si	1.00 max.	% Pass
Titanium	Ti	--	% --
Vanadium	V	--	% --
Nitrogen	N	0.10 max.	% Pass
Niobium	Nb	--	% --
Carbon Equivalent	CEV	--	% --

Remark:

a. Test results only relate to the specimen tested.

b. Legends: Pass/Fail - Test results of the specimen are in compliance/~~not in compliance~~ with the chemical requirements of specification.

**Test Report****Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 1 of 2

Castco LRN: MS0180503-4

**Details as supplied by customer**

Name of Customer : Gate Way Valve & Fitting Limited  
Address : Flat A1, 4/F., Galaxy Factory Bldg., 25-27 Luk Hop Street, San Po Kong, Kowloon, Hong Kong  
Job Title : --  
Contract No. : --  
Customer's Ref. No. : --

**Sample details as supplied by customer**

Date Sampled : --  
Date of Sample Received : 03-05-2018  
Test Period : 08-05-2018 to 18-05-2018  
Sample Description : DN150 SS316 Stainless Steel Ball Float Valve (Float Ball)  
Specification : BS EN 10088-1: 2014, Table 2, Grade 1.4401 (316)  
Specimen No. : BC0180427-002-MISL  
Location of Work : -- / Origin: Spain  
Sample Identification No. : -- / Model no.: 200B-RPH / Brand Name: VALVULAS CT  
Manufacturer : GENWEC WASHROOM, S. L.

**Test Method(s):-**

- 1) BS EN ISO 15350 : 2010
- 2) In House Method: ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010
- 4) In House Method: ST-Nb-1(ICP-OES)
- 5) In-house ST-CEV (By calculation)

**Remarks:**

I. Test results only relate to the specimen tested.

Checked by :

  
Cheng Chi Fai  
Senior Manager

Approved Signatory :

  
LEE Stephen Shu HangPh.D.  
Technical Director

**Test Report****Chemical Analysis of Steel**

Date of issue: 19-05-2018

Page 2 of 2

Castco LRN: MS0180503-4

Chemical Analysis		Result
1) Total Carbon Content	C %	0.020
1) Total Sulfur Content	S %	0.0007
2) Chromium	Cr %	16.80
2) Copper	Cu %	--
2) Manganese	Mn %	0.902
2) Molybdenum	Mo %	2.01
2) Nickel	Ni %	10.04
2) Phosphorus	P %	0.031
2) Silicon	Si %	0.469
2) Titanium	Ti %	--
2) Vanadium	V %	--
3) Nitrogen	N %	0.052
4) Niobium	Nb %	--
5) Carbon Equivalent Value	$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$ (%)	--

**End of Report**

Form No.: CHM Steel-1 T dd 16/12/2015

## Appendix A

## Summary of Chemical Analysis of Steel

Date of issue: 19-05-2018

Page 1 of 1

Castco LRN: MS0180503-4

Name of Customer: Gate Way Valve &amp; Fitting Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 03-05-2018

Testing Period:

08-05-2018 to 18-05-2018

Castco LRN:	MS0180503-4		
Sample I.D. No.:	-- / Model no.: 200B-RPH / Brand Name: VALVULAS CT		
Sample Description :	DN150 SS316 Stainless Steel Ball Float Valve (Float Ball)		
Location of Work :	-- / Origin: Spain		
Specimen No.:	BC0180427-002-MISL		
Manufacturer:	GENWEC WASHROOM, S. L.		
Specification refer to BS EN 10088-1: 2014, Table 2, Grade 1.4401	Compliance (Pass/Fail) <sup>(b)</sup>		
Carbon	C	0.07 max.	% Pass
Sulfur	S	0.015 max.	% Pass
Chromium	Cr	16.5 to 18.5	% Pass
Copper	Cu	--	% --
Manganese	Mn	2.00 max.	% Pass
Molybdenum	Mo	2.00 to 2.50	% Pass
Nickel	Ni	10.0 to 13.0	% Pass
Phosphorus	P	0.045 max.	% Pass
Silicon	Si	1.00 max.	% Pass
Titanium	Ti	--	% --
Vanadium	V	--	% --
Nitrogen	N	0.10 max.	% Pass
Niobium	Nb	--	% --
Carbon Equivalent	CEV	--	% --

Remark:

a. Test results only relate to the specimen tested.

b. Legends: Pass/Fail - Test results of the specimen are in compliance/~~not in compliance~~ with the chemical requirements of specification.