

**Summary of Test Results**

Reference no. : BC-SUMMARY-2021-087

Customer : Gate Way Valve &amp; Fitting Ltd.

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

Sample description : Bronze Solder Joint Gate Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz (Thailand) Ltd.

Brand name : Toyo

Body marking : RED WHITE TOYO (Inch) 125S 200 WOG

Model no. : Fig. 207

Origin : Thailand

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

Test standard : BS EN 12288 : 2010 / BS EN 1982 : 2008 / BS EN 12164 : 2016

Test period : 30 March to 26 May 2021

**A) Sample List**

DN (mm)	Inch	Specimen no.
15	1/2"	210325-2609-001
22	3/4"	210325-2609-002
28	1"	210325-2609-003
35	1-1/4"	210325-2609-004
42	1-1/2"	210325-2609-005
54	2"	210325-2609-006

**B) Test Item****1) Dimensions Check (BS EN 12288 : 2010 Clause 4.2.4)**

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210325-2609
22	3/4"	Passed	
28	1"	Passed	
35	1-1/4"	Passed	
42	1-1/2"	Passed	
54	2"	Passed	

**2) Pressure Test (BS EN 12288 : 2010 Clause 5.1)**

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210325-2609
22	3/4"	Passed	
28	1"	Passed	
35	1-1/4"	Passed	
42	1-1/2"	Passed	
54	2"	Passed	

## Summary of Test Results

Reference no. : BC-SUMMARY-2021-087

## B) Test Item (cont)

## 3) Chemical Composition (Body) (BS EN 1982 : 2008 Table 23b Grade CC491K)

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210409-2410
28	1"	Passed	210409-2414
54	2"	Passed	210409-2418

## 4) Chemical Composition (Bonnet) (BS EN 1982 : 2008 Table 23b Grade CC491K)

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210409-2411
28	1"	Passed	210409-2415
54	2"	Passed	210409-2419

## 5) Chemical Composition (Seat) (BS EN 12164 : 2016 Table 6 Grade CW617N)

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210513-2049

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

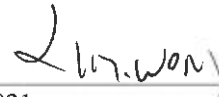
DN (mm)	Inch	Test results	Castco LRN
28	1"	Passed	210409-2416
54	2"	Passed	210409-2420

## 6) Chemical Composition (Stem) (BS EN 12164 : 2016 Table 6 Grade CW602N)

DN (mm)	Inch	Test results	Castco LRN
15	1/2"	Passed	210513-2050
28	1"	Passed	210513-2051
54	2"	Passed	210513-2052

Prepare by :  
Date : 04 June 2021


**FU HO MAN**  
Assistant Technical Manager

Review by :  
Date : 04 June 2021


**WONG KA MAN**  
Senior Manager

**Test Report**  
**Copper Alloy Gate Valves - Dimensions**  
(In-house method VAL-COPPER-DIM-EN12288 in conjunction with the following specification(s):  
BS EN 12288 : 2010 Clause 4.2.4)

Date of issue : 29 April 2021

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Castco LRN : 210325-2609

**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

Contract no. : - -

Job title : - -

Sample description : Bronze Solder Joint Gate Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz (Thailand) Ltd.

Brand name : Toyo

Body marking : RED WHITE TOYO (Inch) 125S 200 WOG

Model no. : Fig. 207

Origin : Thailand

Sample submitted by : Gate Way Valve & Fitting Ltd.

**Laboratory test results**

Date of sample received : 24 March 2021

Date of test : 30 March 2021

Specimen no.	210325-2609-001	210325-2609-002	210325-2609-003	210325-2609-004	210325-2609-005	210325-2609-006	
DN (mm)	15	22	28	35	42	54	
Inch	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	
Inside diameter of socket (mm)	Measured mean value	15.13	22.15	28.15	35.13	42.21	54.11
	Requirement	15.06 to 15.15	22.07 to 22.18	28.07 to 28.18	35.09 to 35.23	42.09 to 42.23	54.09 to 54.23
Length of engagement (mm)	Measured mean value	12	19	23	25	28	34
	Requirement	min. 10.6	min. 15.4	min. 18.4	min. 23	min. 27	min. 32
Wall thickness (mm)	Measured mean value	2.15	2.74	2.86	3.04	2.86	3.96
	Requirement	min. 1.2	min. 1.5	min. 1.8	min. 1.8	min. 2.0	min. 2.3

**Remark(s) :**

- Test results relate only to the specimen tested.
- Test results of sample comply with the requirement of BS EN 12288 : 2010 Table 5 (this specification is not covered by the laboratory's HOKLAS accreditation).
- 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

- The socket dimensions suitable to BS EN 1254-1 and fit for soldering with copper tube to BS EN 1057 copper.

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

**FU HO MAN**  
Assistant Technical Manager

Approved Signatory : \_\_\_\_\_

**WONG KA MAN**  
Senior Manager

Form no. : BC\_COPPER ALLOY GATE VALVES\_DIM\_BSEN12288-2010\_T\_dd\_22/04/2020

**Test Report****Copper Alloy Gate Valves - Shell and Seat Tightness**
 (BS EN 12266-1 : 2012 Annex A3 and A4 in conjunction with following specification(s) :  
 BS EN 12288 : 2010 Clause 5.1)

Date of issue : 29 April 2021

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Castco LRN : 210325-2609

**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

Contract no. : - -

Job title : - -

Sample description : Bronze Solder Joint Gate Valve

Nominal pressure (PN) : 16

Manufacturer : Kitz (Thailand) Ltd.

Brand name : Toyo

Body marking : RED WHITE TOYO (Inch) 125S 200 WOG

Model no. : Fig. 207

Origin : Thailand

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

**Laboratory test results**

Date of sample received : 24 March 2021

Date of test : 30 March 2021

**A) Shell Tightness**

Specimen no.	210325-2609-001	210325-2609-002	210325-2609-003	210325-2609-004	210325-2609-005	210325-2609-006
DN (mm)	15	22	28	35	42	54
Inch	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Water temperature (°C)	22.0	22.0	22.0	22.0	22.0	22.0
Apply pressure (bar)	24	24	24	24	24	24
Test duration (s)	60	60	60	60	60	60
Visually detectable leakage	No	No	No	No	No	No
Requirement	Visually detectable leakage is not permitted					

**Test Report****Copper Alloy Gate Valves - Shell and Seat Tightness**(BS EN 12266-1 : 2012 Annex A3 and A4 in conjunction with following specification(s) :  
BS EN 12288 : 2010 Clause 5.1)

Date of issue : 29 April 2021

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Castco LRN : 210325-2609

**Laboratory test results****B) Seat Tightness**

Specimen no.	210325-2609-001	210325-2609-002	210325-2609-003	210325-2609-004	210325-2609-005	210325-2609-006
DN (mm)	15	22	28	35	42	54
Inch	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Water temperature (°C)	22.0	22.0	22.0	22.0	22.0	22.0
Side	A	A	A	A	A	A
Apply pressure (bar)	17.6	17.6	17.6	17.6	17.6	17.6
Test duration (s)	60	60	60	60	60	60
Leakage rate (mm <sup>3</sup> /s)	0	0	0	0	0	0
Side	A	A	A	A	A	A
Apply pressure (bar)	17.6	17.6	17.6	17.6	17.6	17.6
Test duration (s)	60	60	60	60	60	60
Leakage rate (mm <sup>3</sup> /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					

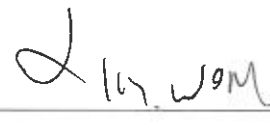
**Remark(s) :**

1. Test results relate only to the specimen tested.
2. Test results of sample comply with the requirement of BS EN 12288 : 2010 Clause 4.3.3 and 4.3.4 (this specification is not covered by the laboratory's HOKLAS accreditation).
3. Effect of measurement uncertainty has not been taken into account.
4. The socket dimensions suitable to BS EN 1254-1 and fit for soldering with copper tube to BS EN 1057 copper.

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

  
**FU HO MAN**  
Assistant Technical Manager

Approved Signatory : \_\_\_\_\_

  
**WONG KA MAN**  
Senior Manager

## Test Report

## Copper Alloy Gate Valves - Dimensions

(In-house method VAL-COPPER-DIM-EN12288 in conjunction with the following specification(s):  
BS EN 12288 : 2010 Clause 4.2.4)

Date of issue : 29 April 2021

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Castco LRN : 210325-2609

Appendix A210325-2609-001210325-2609-002210325-2609-003210325-2609-004210325-2609-005

End of Report