



## TEST REPORT

TITLE : Testing of Valve

OUR REFERENCE NO. : J8474-1

DESCRIPTION OF SAMPLE : Bronze globe valves with solder-joint ends; pressure rating PN16; to series B of BS5154; size: A) 15mm, B) 22mm, C) 28mm, D) 35mm and E) 54mm







SAMPLE SUBMITTED BY : Gate Way Valve & Fitting Ltd.  
Flat F, 22/F., Luk Hop Industrial Bldg.,  
8 Luk Hop Street, San Po Kong,  
Kowloon, Hong Kong.

MANUFACTURER : Toyo Valve Co., Ltd.

COUNTRY OF ORIGIN : JAPAN

BRAND : TOYO

BODY MARKINGS :

Size of valve (mm)	Body markings	
15	RED - WHITE  	125 - 1/2 
22		125 - 3/4 
28		125 - 1 
35		125 - 1 1/4 
54		125 - 2 

MODEL : Fig. No. 212

METHOD OF TESTS : BSEN12288: 2003; BSEN12266-1: 2003

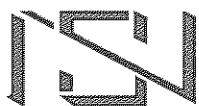
PERIOD OF TESTS : 23<sup>rd</sup> September to 4<sup>th</sup> October 2002

RESULTS: - (apply only to the samples tested)

### 1. DIMENSIONS (in millimetres)

		Sample				
		A	B	C	D	E
Nominal size		15	22	28	35	54
Height of valve, from top to bottom		92.2	110	134	160.7	211
Diameter of handwheel		55.5	62.8	70.2	80.3	100.3
Face to face dimension		65.2	85	98	110	152.3
Minimum stem diameter		8.0	8.95	10.45	11.0	14.0
Minimum body wall thickness		2.8	3.0	2.5	2.5	2.5
Solder joint socket (BSEN1254-1)	length of engagement	12.65	19.55	23.5	24.7	34.6
	internal diameter	15.1	22.15	28.1	35.1	54.10

Note: the solder joints can match copper tubes complying with BS2871 Part 1 and BSEN1057.



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### 2. HYDRAULIC PRESSURE TEST

		Nominal pressure PN (bar)	Body test (1.5 PN)			Seat test (1.1 PN)		
			Test pressure (bar)	Duration (s)	Remark	Test pressure (bar)	Duration (s)	Remark
Sample	15mm	16	24	15	Pass	18	15	Pass
	22mm	16	24	15	Pass	18	15	Pass
	28mm	16	24	15	Pass	18	15	Pass
	35mm	16	24	15	Pass	18	15	Pass
	54mm	16	24	15	Pass	18	15	Pass
BSEN Requirement	15mm to 54mm	16	24	15	/	18	15	/

Note : no leakage was detected during the above test.

### 3. CHEMICAL COMPOSITION

Component		Elements Compositions (%)							Designation
		Cu	Zn	Pb	Sn	Ni	Fe	Other Impurities	
Body, bonnet (of all valves)		83.8	5.4	5.1	5.2	0.2	/	0.3	CC491K (BSEN1982)
Disc	of valves with size 15mm to 35mm	62.5	33.8	2.2	0.9	/	0.1	0.5	see Note 1
	of valve with size 54mm	83.9	5.3	5.2	5.2	0.1	/	0.3	CC491K (BSEN1982)
Stem (of all valves)		61.8	34.7	2.1	0.6	0.1	0.3	0.4	see Note 1

Note 1 : A further tensile test on this copper alloy material showed that its tensile strength (365N/mm<sup>2</sup>) and elongation (28%) are comparable to those of copper zinc alloy grade CW602N (tensile strength 280-430 N/mm<sup>2</sup>, elongation 15-30%) of BSEN12164 recommended by BSEN12288. Accordingly, this material is considered acceptable.

### 4. SUMMARY OF RESULTS (apply only to the sample tested)

Dimensions -- Satisfactory  
Hydraulic pressure test -- Satisfactory  
Chemical composition -- Satisfactory

Remark :

- 1) The tests shown above were actually performed during the period from 23<sup>rd</sup> September to 4<sup>th</sup> October 2002; the test results were found complying with BS5154: 1991. However, BSEN12288: 2003 was referred to since the test results are found also complying with it.
- 2) The internal water passage surface of all valve samples does not have any metallic coating.

Date : 8<sup>th</sup> March 2010 Authorized signature : \_\_\_\_\_

Nutek Systems is a testing agency,  
approved by the Water Authority and  
Government Supplies Department, for  
testing water supply fittings.

Samson W.K. Yiu

( Director )