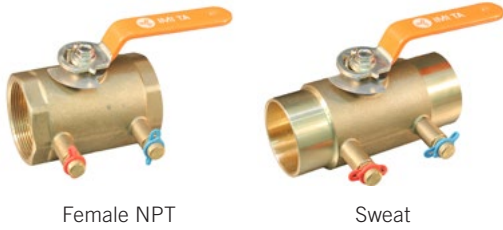


# Victaulic® Balancing Valve

## TA Series 78BL



### 1.0 PRODUCT DESCRIPTION

**Available Sizes**

- ½ – 2"/DN15 – DN50

**Maximum Working Pressure**

- 400 psi/2800 kPa/28 bar

**Operating Temperature**

- -4°F to +248°F/-20°C to +120°C

**Function**

- Shut-off, throttling, and measuring ball valve with adjustable memory stop.

### 2.0 CERTIFICATION/LISTINGS



IAPMO Certified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372.

### 3.0 SPECIFICATIONS – MATERIAL

**Body and End Face:** Lead-free brass.

**O-Rings:** EPDM suitable for service with propylene and ethylene glycol mixtures up to 50% by volume in water.

**Valve Handle:** Zinc-plated low carbon steel with a vinyl dip.

**Blowout Proof Stem:** Stainless steel.

**Ball:** Stainless steel

**Ball Seats:** Polytetrafluoroethylene (PTFE).

**Indexing Handle with Adjustable Memory Stop:** Zinc-plated carbon steel.

**Positioning Pin and Dial Scale:** UNS S30400.

**Fixed Connection:** Female NPT or sweat.

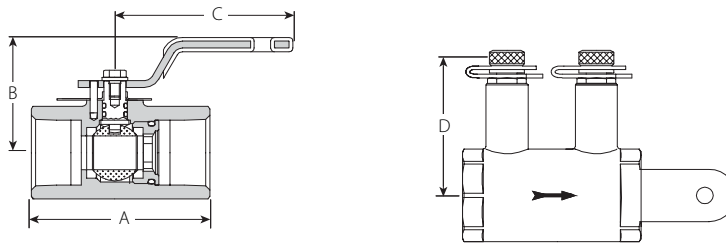
ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

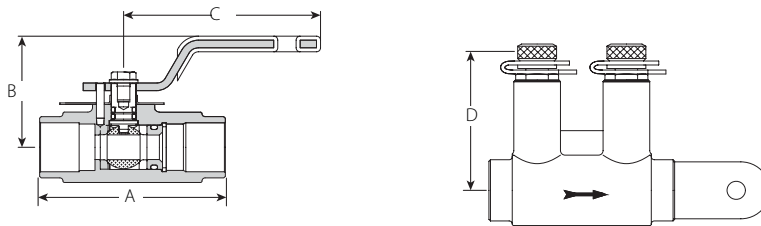
## 4.0 DIMENSIONS

### Female NPT



Body Size inches DN	Dimensions				Full Open C <sub>v</sub> K <sub>v</sub>	Flow Range GPM L/H	Weight
	A inches mm	B inches mm	C inches mm	D inches mm			Approximate (Each) lb kg
½ DN50	2.38 60	1.50 38	2.50 64	1.88 48	2.83 2.45	0.38 - 5.30 86.3 - 1204	0.6 0.3
¾ DN20	2.50 64	1.63 41	2.50 64	2.00 51	6.67 5.77	0.94 - 12.48 213 - 2834	0.8 0.4
1 DN125	3.13 79	2.00 51	4.00 102	2.13 54	10.32 8.93	1.56 - 19.30 354 - 4383	1.3 0.6
1¼ DN32	3.38 86	2.25 57	4.00 102	2.25 57	16.31 14.11	2.11 - 30.50 479 - 6927	2.0 0.9
1½ DN40	3.63 92	2.50 64	4.75 121	2.38 60	24.30 21.02	2.68 - 45.40 609 - 10310	2.8 1.3
2 DN50	4.13 105	2.75 70	4.75 121	2.63 67	45.30 39.18	6.18 - 85.00 1404 - 19304	4.4 2.0

### Sweat



Body Size inches DN	Dimensions				Full Open C <sub>v</sub> K <sub>v</sub>	Flow Range GPM L/H	Weight
	A inches mm	B inches mm	C inches mm	D inches mm			Approximate (Each) lb kg
½ DN50	2.38 60	1.50 38	2.50 64	1.75 44	2.74 2.37	0.36 - 5.13 81.8 - 1165	0.5 0.2
¾ DN20	3.13 79	1.63 41	2.50 64	1.88 48	6.21 5.37	1.07 - 11.61 243 - 2637	0.7 0.3
1 DN125	3.63 92	2.00 51	4.00 102	2.13 54	10.29 8.90	1.24 - 19.20 282 - 4360	1.2 0.5
1¼ DN32	4.00 102	2.25 57	4.00 102	2.25 57	16.38 14.17	2.20 - 30.60 500 - 6949	1.7 0.7
1½ DN40	4.63 117	2.50 64	4.75 121	2.38 60	23.80 20.59	2.61 - 44.60 593 - 10129	2.4 1.1
2 DN50	5.50 140	2.75 70	4.75 121	2.63 67	44.60 38.58	6.30 - 83.00 1431 - 18849	3.9 1.6

## 4.1 OPTIONAL PARTS

### PT Ports & Handle Extension (Optional)

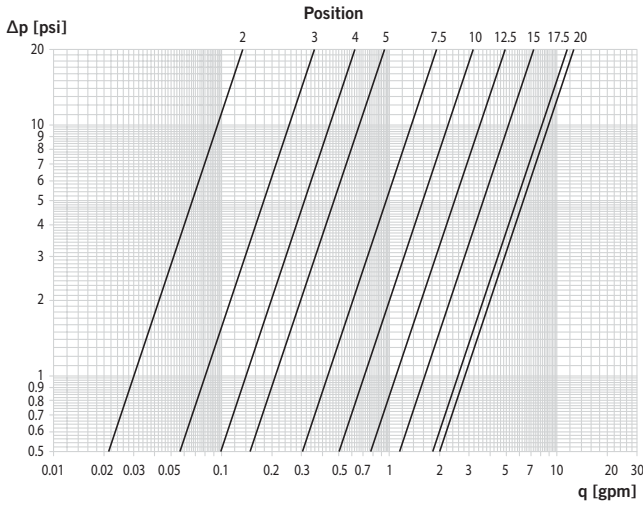
Description	Victaulic Part Code
Kit of (2) Extended PT Ports	K00078B2XT
Extended Stem for ½" or ¾" Valve	P00478B2HL
Extended Stem for 1" or 1¼" Valve	P01078B2HL
Extended Stem for 1½" or 2" Valve	P01478B2HL

## 5.0 PERFORMANCE

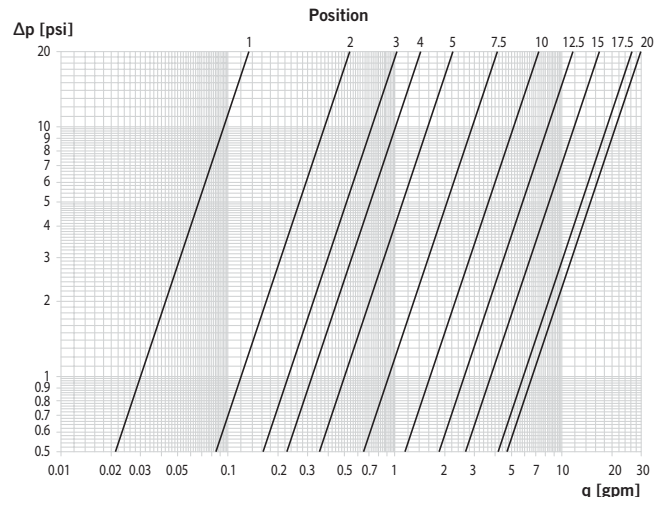
### Configuration Information

#### C<sub>v</sub> VERSUS HANDLE POSITION CHARTS - THREADED

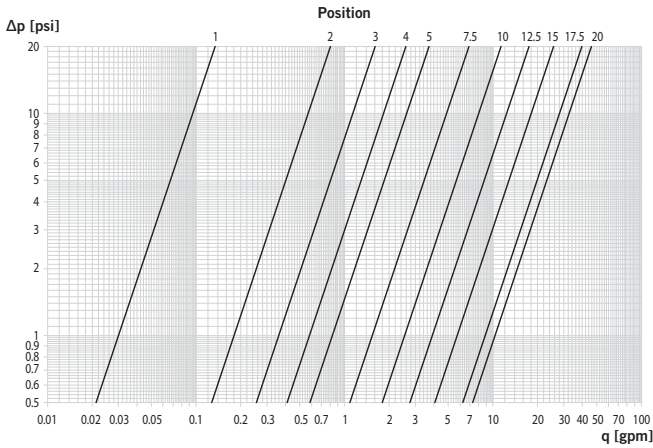
C<sub>v</sub> Versus Handle Position for ½-inch Manual Balancing Ball Valves (Threaded)



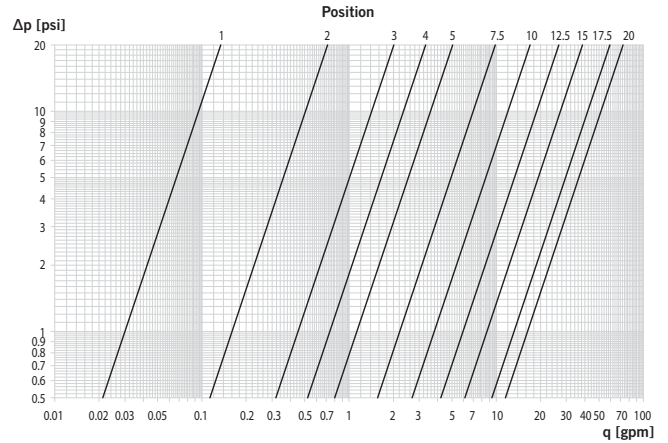
C<sub>v</sub> Versus Handle Position for ¾-inch Manual Balancing Ball Valves (Threaded)



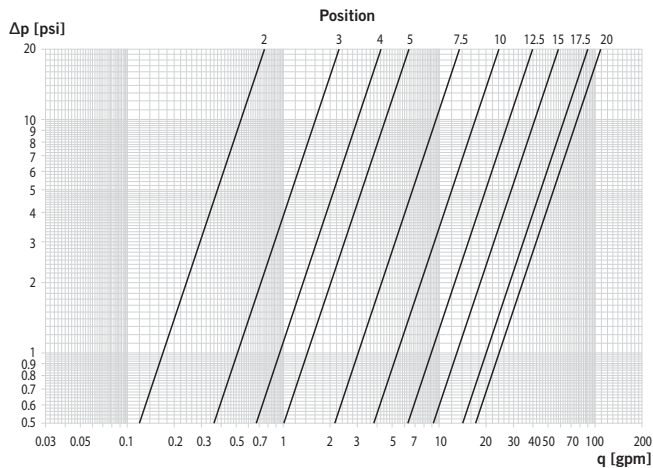
C<sub>v</sub> Versus Handle Position for 1-inch Manual Balancing Ball Valves (Threaded)



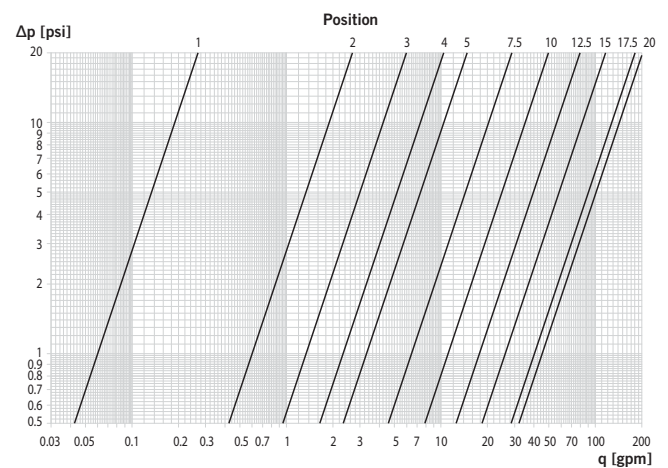
C<sub>v</sub> Versus Handle Position for 1¼-inch Manual Balancing Ball Valves (Threaded)



C<sub>v</sub> Versus Handle Position for 1½-inch Manual Balancing Ball Valves (Threaded)



C<sub>v</sub> Versus Handle Position for 2-inch Manual Balancing Ball Valves (Threaded)

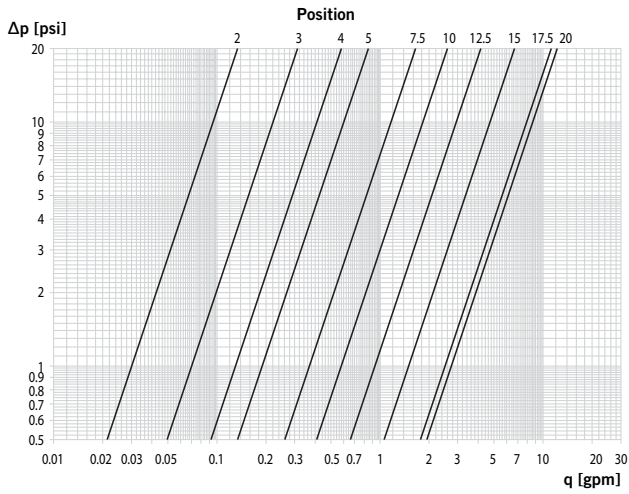


## 5.0 PERFORMANCE (Continued)

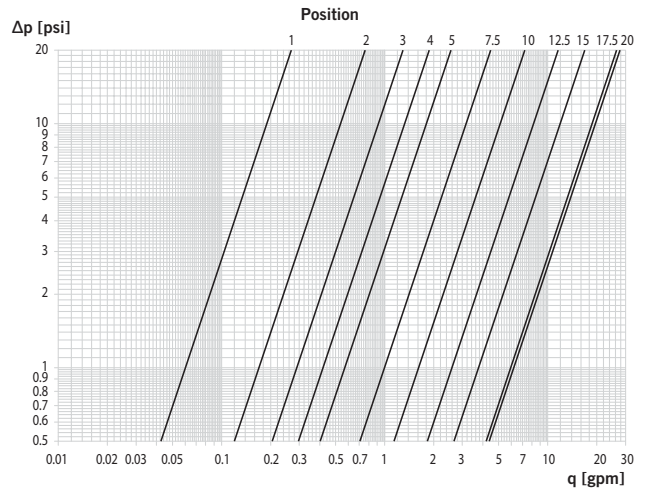
### Configuration Information

#### C<sub>v</sub> VERSUS HANDLE POSITION CHARTS - SWEAT

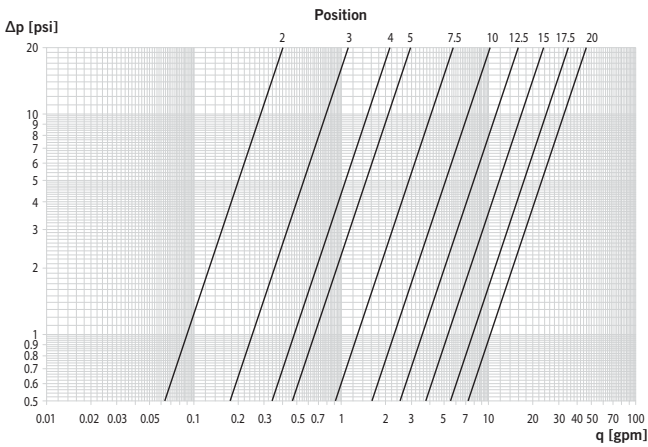
C<sub>v</sub> Versus Handle Position for ½-inch Manual Balancing Ball Valves (Sweat)



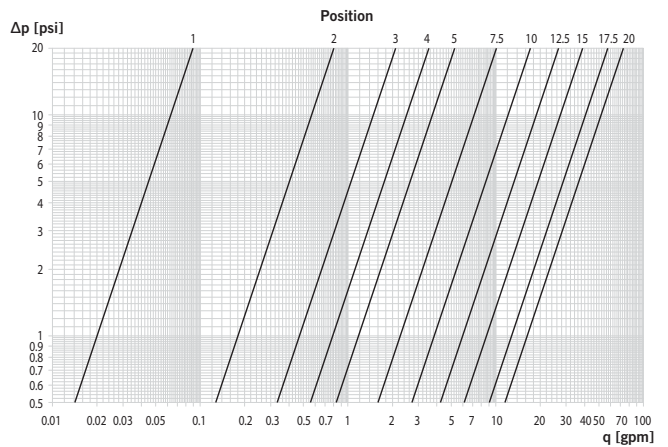
C<sub>v</sub> Versus Handle Position for ¾-inch Manual Balancing Ball Valves (Sweat)



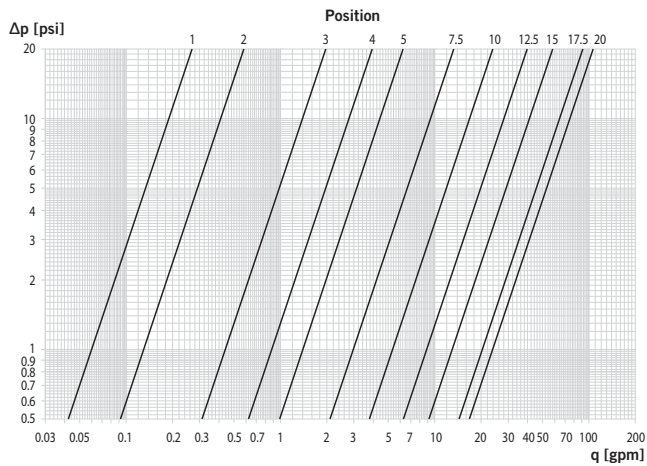
C<sub>v</sub> Versus Handle Position for 1-inch Manual Balancing Ball Valves (Sweat)



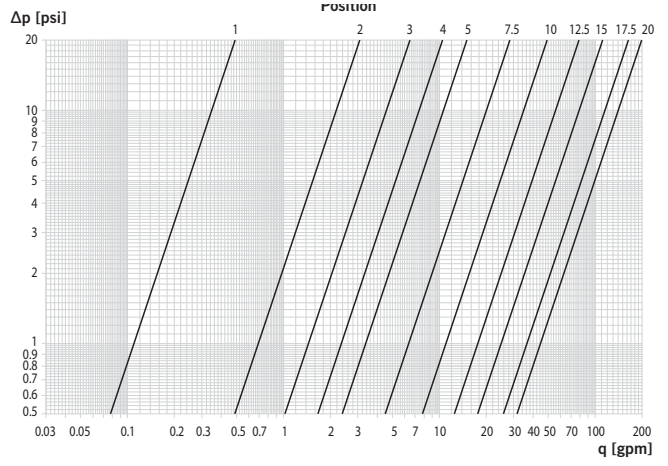
C<sub>v</sub> Versus Handle Position for 1¼-inch Manual Balancing Ball Valves (Sweat)



C<sub>v</sub> Versus Handle Position for 1½-inch Manual Balancing Ball Valves (Sweat)



C<sub>v</sub> Versus Handle Position for 2-inch Manual Balancing Ball Valves (Sweat)



## 5.1 PERFORMANCE

### Sizing

When  $\Delta p$  and design flow is known, calculate the Cv by using the formula provided. Select the valve size so the setting will be approximately 75% of total opening.

$$Cv = 1.52 \frac{q}{\sqrt{\Delta p}} \quad q \text{ in GPM, } \Delta p \text{ in ft WG}$$

$$Cv = \frac{q}{\sqrt{\Delta p}} \quad q \text{ in GPM, } \Delta p \text{ in psi}$$

**Cv Versus Handle Position Table - Threaded**

Handle Position	Average Cv					
	½"	¾"	1"	1 ¼"	1 ½"	2"
0	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.03	0.03	0.03	0.00	0.06
2	0.03	0.12	0.18	0.16	0.17	0.60
3	0.08	0.23	0.36	0.45	0.51	1.34
4	0.14	0.32	0.58	0.74	0.95	2.33
5	0.21	0.50	0.83	1.13	1.43	3.30
7.5	0.43	0.92	1.54	2.21	3.03	6.45
10	0.71	1.63	2.54	3.80	5.41	11.13
12.5	1.10	2.61	3.90	5.95	8.91	17.77
15	1.63	3.76	5.73	8.65	13.02	26.12
17.5	2.58	5.89	8.86	13.25	20.14	40.36
20	2.83	6.67	10.32	16.31	24.27	45.31

**Cv Versus Handle Position Table - Sweat**

Handle Position	Average Cv					
	½"	¾"	1"	1 ¼"	1 ½"	2"
0	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.06	0.00	0.02	0.06	0.11
2	0.03	0.17	0.09	0.18	0.13	0.69
3	0.07	0.29	0.25	0.47	0.44	1.45
4	0.13	0.42	0.48	0.79	0.88	2.35
5	0.19	0.57	0.66	1.18	1.40	3.37
7.5	0.37	1.00	1.29	2.26	2.97	6.36
10	0.58	1.62	2.29	3.84	5.34	11.03
12.5	0.93	2.59	3.56	5.97	8.88	17.67
15	1.50	3.77	5.30	8.68	13.02	25.01
17.5	2.51	5.93	7.80	12.84	20.37	36.52
20	2.74	6.21	10.29	16.38	23.78	44.63



## 6.0 NOTIFICATIONS

### WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

## 7.0 REFERENCE MATERIALS

[08.16: Victaulic Balancing Valves TA Series 786/787H/788/789 and Series 78KH](#)

[08.51: Victaulic ICSS- Low Lead Balancing Valve TA Series 76X](#)

[08.64: Victaulic Series 78Y/78U Manual Coil-Kit™ Coil Pack with TA Series 78BL Balancing Ball Valve](#)

[08.65: Victaulic Series 78T/78U Manual Coil-Kit™ Coil Pack with TA Series 78BL Balancing Ball Valve](#)

### User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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### Note

This product shall be manufactured by Victaulic or to Victaulic specifications. Victaulic recommends all products to be installed in accordance with current IMI TA installation/assembly instructions. Victaulic and IMI TA reserve the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

### Installation

Reference should always be made to the current IMI TA installation/assembly instructions for the product you are installing. For coupling and strainer installation, reference should always be made to the [I-100 Victaulic Field Installation Handbook](#) for the product you are installing. Handbooks are included with each shipment of Victaulic products for complete installation and assembly data, and are available in PDF format on our website at [www.victaulic.com](http://www.victaulic.com)

### Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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