

Victaulic Balancing Valve for Potable Water Applications

TA Series 790



08.59



1.0 PRODUCT DESCRIPTION

Available Sizes

- ½ – 2"/DN15 – DN50

Maximum Working Pressure

- 400 psi/ 2758 kPa/27.6 bar

Operating Temperature Range

- –4°F to +248°F/–20°C to +120°C

Application

- Heating (not steam) and cooling systems
- Potable water systems

Function

- Balancing
- Pre-setting
- Measuring
- Shut-off
- Draining (Accessory)

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.

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	



3.0 SPECIFICATIONS – MATERIAL

TA Series 790 Balancing Valve for Potable Water Applications

Valve Body and Bonnet: Brass CC768S

Sealing (Body/Bonnet): EPDM O-ring

Valve Plug: Brass CW724R (CuZn21Si3P)

Seat Seal: EPDM O-ring

Spindle: Brass CW724R (CuZn21Si3P)

Slip Washer: Polytetrafluoroethylene (PTFE)

Spindle Seal: EPDM O-ring

Spring: Stainless steel

Handwheel: Polyamide and TPE

Measuring Points: Brass CW724R (CuZn21Si3P)

Sealings: EPDM

Caps: Polyamide and TPE

NOTE

- Measuring points are self-sealed. Remove the cap and insert the probe through the seal.

Drain Kit (Accessory):

Body: Brass CC768S

Sealing: EPDM

Gaskets: Fiber-based aramid

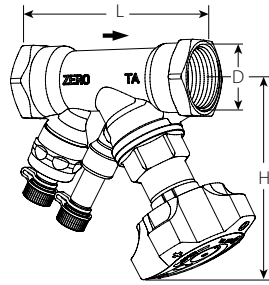
NOTE

- Valve is delivered without drain kit. The valve has a sleeve which can temporarily be removed, allowing a drain kit for ¾" NPS hose connection (available as an accessory) to be fitted.

4.0 DIMENSIONS

TA Series 790 Balancing Valve for Potable Water Applications

Female NPT threads – Threads according to ANSI/ASME B1.20.1-1983



Size		Dimensions				Weight	
Nominal	Actual Outside Diameter	L	H	D		Approx. (Each)	
inches DN	inches mm	inches mm	inches mm	Thread Size	Cv Kv	lb kg	
½ DN15	0.840 21.3	3.31 84	3.94 100	½ NPT	3.0 2.6	1.0 0.5	
¾ DN20	1.050 26.9	3.7 94	3.94 100	¾ NPT	6.2 5.4	1.2 0.5	
1 DN25	1.315 33.7	4.13 105	4.13 105	1 NPT	9.9 8.6	1.5 0.7	
1 ¼ DN32	1.660 42.4	4.76 121	4.13 105	1 ¼ NPT	16.4 14.1	2.2 1.0	
1 ½ DN40	1.900 48.3	4.96 126	4.72 120	1 ½ NPT	22.3 19.2	3.4 1.5	
2 DN50	2.375 60.3	6.1 155	4.72 120	2 NPT	37.3 32.2	4.4 2.0	

NOTES

- → = Flow direction
- Cv = gpm at a pressure drop of 1 psi and fully open valve

5.0 PERFORMANCE

TA Series 790 Balancing Valve for Potable Water Applications

Sizing

When Δp and the design flow are known, use the formula to calculate the Cv value or use the diagram.

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

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

Cv Values

No. of Turns	½"	¾"	1"	1 ¼"	1 ½"	2"
0.5	0.157	0.616	0.693	1.38	2.19	3.03
1	0.261	0.903	1.19	2.42	3.93	4.74
1.5	0.401	1.41	2.46	3.88	5.48	7.82
2	0.714	2.25	4.21	6.03	7.23	13.2
2.5	1.08	3.13	6.08	8.98	10.6	18.3
3	1.69	4.29	7.69	11.4	14.8	24.9
3.5	2.39	5.21	9.01	13.8	18.7	31.2
4	2.96	6.23	9.93	16.4	22.3	37.3

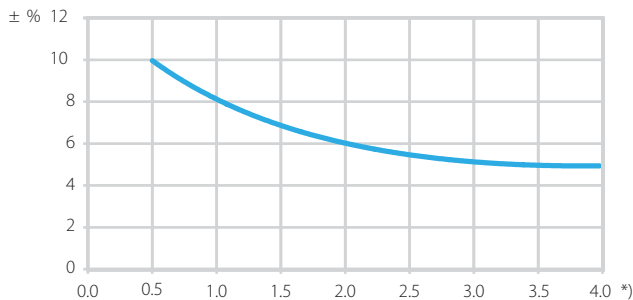
Measuring Accuracy

The zero position is calibrated and must not be changed.

Deviation of flow at different settings

The curve (Figure 1) is valid for valves with normal pipe fittings (Figure 2). Try also to avoid mounting taps and pumps, immediately before or after the valve.

The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction although tolerances can be greater (maximum 5% more).



*) Setting, No. of turns.

Figure 1

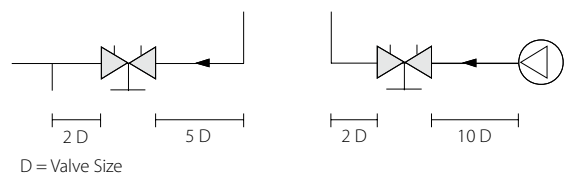


Figure 2

NOTE

- Valve may be installed in any orientation (horizontal, vertical, up or down) with respect to the hand wheel and the PT ports.



Correction Factors

The flow calculations are valid for water (68°F). For other liquids with approximately the same viscosity as water ($\leq 20 \text{ cSt} = 3^\circ \text{E} = 100 \text{ S.U.}$), it is only necessary to compensate for the specific density. However, at low temperatures, the viscosity increases, and laminar flow may occur in the valves. This causes a flow deviation that increases with small valves, low settings and low differential pressures. Correction for this deviation can be made with the software HySelect or directly in the IMI TA balancing instruments.

NOTE

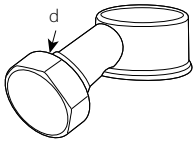
- The free IMI TA HyTools app assists in converting dP measurements to flow rate when using IMI TA valves. When using the calculator in the HyTools app to calculate flow rates, use the STAD* option in the valve selection menu.

5.0 PERFORMANCE (CONTINUED)

Accessories

Drain Kit STAD

Can be installed during operation. For valves with a sleeve, in metal or plastic, on measuring point.



d	Part Code
UNS 1 1/16" x 11.5	K000786CBV

6.0 NOTIFICATIONS

⚠ WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping 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 786H/787H/788/789 and Series 78KH](#)

[08.29: Victaulic Differential Pressure Controller - TA Series 793/794](#)

[08.30: Victaulic KOIL-KIT™ Coil Pack](#)

[08.34: Victaulic Automatic Balancing Valves - Series 76T, 76B, 76K, 76V & 76G](#)

[08.37: Victaulic Compact Pressure Independent Balancing and Control Valve \(Compact P\) - TA Series 7CP](#)

[08.38: Victaulic TBV Terminal Balancing and Control Valves - Series TC & Series TCM](#)

[08.46: Victaulic Differential pressure Controller - TA Series 7PR](#)

[08.47: Victaulic Compact Differential Pressure Control TA Series 7DA](#)

[08.50: Victaulic Balancing Valve TA Series 78BL](#)

[08.55: Victaulic Pressure Independent Balancing and Modulating Control Valve - TA Series 7MP](#)

[08.57: Victaulic Differential Pressure Relief Valve TA Series 782](#)

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

Warranty

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

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