

5.2 PERFORMANCE

Series 78KH Balancing Valve

C_v Values for Various Handle Settings

The values below may be used when calculating and sizing a piping system.

C_v Values for Sizes listed below ¹						
No. of Turns	½"	¾"	1"	1 ¼"	1 ½"	2"
0.50	0.157	0.616	0.693	1.38	2.19	3.03
1.00	0.261	0.903	1.19	2.42	3.93	4.74
1.50	0.401	1.41	2.46	3.88	5.48	7.82
2.00	0.714	2.25	4.21	6.03	7.23	13.2
2.50	1.08	3.13	6.08	8.98	10.6	18.3
3.00	1.69	4.29	7.69	11.4	14.8	24.9
3.50	2.39	5.21	9.01	13.8	18.7	31.2
4.00 ²	2.96	6.23	9.93	16.4	22.3	37.3

¹ C_v = GPM at a ΔP of 1 psi/7 kPa through the valve at any given setting.
1 psi = 2.31 ft. of H₂O

² Full open valve.

5.3 CORRECTION FACTORS

For liquids other than water, the flow values from the balancing wheel can be adjusted as follows:

Divide the flow rate by the square root of the specific gravity.

$$\text{Actual Flow} = \frac{q_{\text{Calculated}}}{\sqrt{SG}}$$

This applies to liquids having, on the whole, the same viscosity as water, i.e. most water/glycol mixtures and water/brine solutions at room temperature. At low temperatures, the viscosity increases and laminar flow may occur in certain valves. The risk increases with small valves, low settings and low differential pressures.

A computer program (Hy-Select) is available for calculation of pre-setting values and other applications. When the flow setting is verified or changed to the final setting, the memory stop should be set. Contact Victaulic for further information.

When Δp and the design flow rate are known, use the formula shown to calculate the C_v value.

$$C_v = 1.52 \frac{q}{\sqrt{\Delta p}}$$

q in GPM, Δp in Ft. of H₂O

$$C_v = \frac{q}{\sqrt{\Delta p}}$$

q in GPM, Δp in psi

A computer program, Hy-Select, is available from Victaulic for calculation of pre-setting values and other applications.

5.4 PART CODES

Kit Description	Nominal Kit Size	Expected Control Valve Size (Series 78U Outlet and Valve Size Inlet)	Balancing Valve Size	Without Customer-Supplied ATC Valve	
				Without PT Port and Handle Extensions	With PT Ports and Handle Extensions
				Victaulic Part Code	
78T Fem x Fem, 78U Fem x Male Union, 78KH Male Union x Fem without hoses	1/2	1/2	1/2	K000799C02	K000799O21
	3/4	1/2	1/2	K000799083	K000799CY8
	3/4	1/2	3/4	K000799085	K000799O17
	3/4	3/4	3/4	K000799C04	K000799EV4
	1	1/2	1/2	K000799Z55	K00A7997AR
	1	3/4	3/4	K00A7996JF	K00A7996I3
	1	1/2	1	K000799683	K000799O18
	1	3/4	1	K000799N17	K000799O22
	1	1	1	K000799908	K00A7995JY
	1 1/4	3/4	1 1/4	K00A799DI7	K000799O28
	1 1/4	1	1 1/4	K000799N10	K000799O23
	1 1/4	1 1/4	1 1/4	K000799909	K00A7995JZ
	1 1/2	1	1 1/2	K000799878	K000799O24
	1 1/2	1 1/4	1 1/2	K000799877	K00A7996I4
	1 1/2	1 1/2	1 1/2	K00A799D27	K000799EW1
	78T Fem x Fem w/2' Male x Male Union Hose, 78U Fem x Male Union w/2' Male x Male Union Hose, 78KH Male Union x Fem	1/2	1/2	1/2	K000799531
3/4		1/2	1/2	K000799O31	K00A7996I6
3/4		1/2	3/4	K000799212	K000799I43
3/4		3/4	3/4	K000799205	K00A7995J2
1		1/2	1/2	K00A7996JG	K00A7996I7
1		3/4	3/4	K000799Y36	K00A7996I8
1		1/2	1	K000799532	K00A7995J3
1		3/4	1	K000799530	K000799G25
1		1	1	K000799AO4	K00A7995J4
1 1/4		3/4	1 1/4	K00A799DI8	K00A7996I9
1 1/4		1	1 1/4	K000799D63	K00A7996JA
1 1/4		1 1/4	1 1/4	K000799ET4	K00A7995J5
1 1/2		1	1 1/2	K00A799AAZ	K00A7996JB
1 1/2		1 1/4	1 1/2	K000799EG6	K00A7996JD
1 1/2		1 1/2	1 1/2	K00A799A5J	K00A7995J6
2		1 1/4	2	K00A7995WM	K00A7996JC
2	1 1/2	2	K00A799BZ0	K00A7996JE	
2	2	2	K00A799BJ1	K00A7995J7	

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](#)
[I-KOIL-KIT: Victaulic KOIL-KIT™Coil Pack Installation and Maintenance Instructions](#)

User Responsibility for Product Selection and Suitability

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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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