

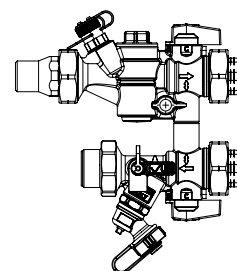
Victaulic® Series UBA Unibody ABV Balancing Valve



PROJECT INFORMATION

106.20

Project
Contractor
Job
Engineer
Date



1.0 PRODUCT DESCRIPTION

Available Sizes: ½ – 1"/DN15 – DN25 (Series UH1 Hose Ready and Non-Hose Ready)

Function: Compact, multi-function coil hookup device includes a multi-directional flushing bypass for ease of commissioning and maintenance, flow control, straining, draining, isolation, and pressure/temperature/flow verification.

Application: Hydronic heating and cooling systems containing treated water.

Maximum Working Pressure: 365 psi / 2500 kPa / 25 bar

Operating Temperature Range: -4°F to 250°F / -20°C to +120°C

2.0 MATERIALS AND DESIGN

Unibody Manifold Valve

Body: Dezincification-Resistant (DZR) Brass

Union Nut: DZR Brass

Union Face Seal: EPDM O-Ring

Tailpiece: DZR Brass

Adapters: DZR Brass

Ball Valve Stem: DZR Brass (304 Stainless Steel Optional)

Ball Valve Stem O-Ring Seals: EPDM

Ball: Plated DZR Brass (304 Stainless Steel Optional)

Ball Seat: PTFE

Handles: Aluminum

Handle Restraint Screw: Plated Carbon Steel

Handle Stop Screw: Stainless Steel

Strainer: Stainless Steel, 20 Mesh (800 µm)

Body Seals: EPDM

Drain Valve Seat: PTFE

Drain Valve Stem: DZR Brass

Unibody Manifold Valve (Continued)

Drain Valve Cap: Nylon

Drain Valve External Body: Glass-Filled Nylon

Drain Valve Outlet Manifold: Glass-Filled Nylon

Drain Valve Outlet Cap: Nylon

Drain Valve Outlet Cap Seal: TPE

Drain Valve Outlet Cap Tether: Elastomer

ABV Cartridge

Insert: Glass-Reinforced PSU/POM/PPS

Internal Metal Components: Stainless Steel

O-Rings: EPDM

Diaphragm:

Low Pressure: EPDM

High Pressure: HNBR

Head Nut: Brass

3.0 AVAILABLE ACCESSORIES

- See [Section 9.0 Reference Materials](#) for Accessory and Replacement Components and Part Codes

THE INFORMATION CONTAINED ON THIS PAGE IS NOT INTENDED TO REPLACE THE FULL PRODUCT DATA LISTED LATER IN THIS DOCUMENT. THOROUGHLY READ AND UNDERSTAND ALL INSTALLATION INSTRUCTIONS AND PRODUCT SAFETY INFORMATION BEFORE INSTALLING THIS PRODUCT.



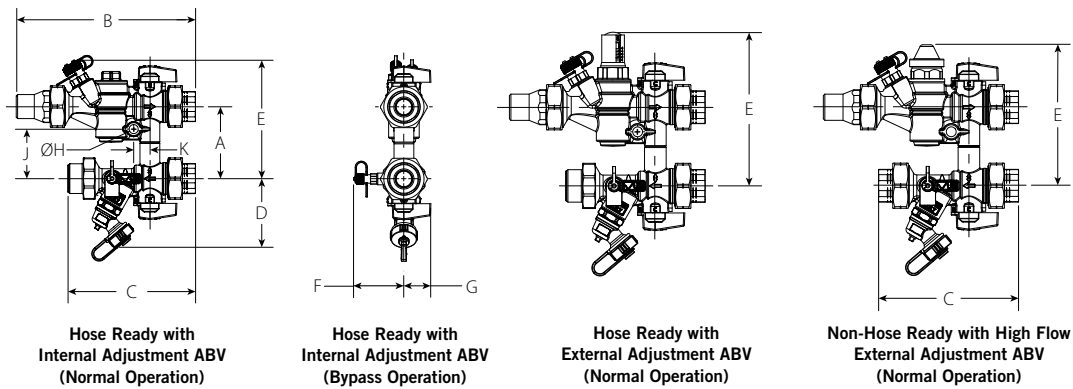
4.0 ABV CARTRIDGE SELECTION GUIDE

Adjustment	ABV Code	Plug Marker or Dial Color	Body Color	Flow Range GPM	Flow Range LPM	Pressure Differential Range psid	Pressure Differential Range kPaD	Part Code
Internal Adjustment	A	Y	Grey	1.28 to 0.68	0.48 to 2.59	2.2 to 18.9	15 to 130	P000UBA0YY
	B	Y	Red	0.911 to 1.89	3.45 to 7.15	2.9 to 18.9	20 to 130	P000UBA0YR
	C	Y	Blue	0.981 to 2.32	3.71 to 8.78	2.9 to 18.9	20 to 130	P000UBA0YU
	D	Y	Black	0.713 to 3.06	2.70 to 11.58	2.9 to 18.9	20 to 130	P000UBA0YB
	E	Y	Green	1.55 to 4.33	5.87 to 16.39	2.9 to 18.9	20 to 130	P000UBA0YG
	F	G	Grey	0.185 to 1.10	0.70 to 4.16	4.4 to 58	30 to 400	P000UBA0GY
	G	G	Red	1.24 to 2.88	4.69 to 10.90	5.8 to 58	40 to 400	P000UBA0GR
	H	G	Blue	0.894 to 3.49	3.38 to 13.21	5.8 to 58	40 to 400	P000UBA0GU
	J	G	Black	0.946 to 4.39	3.58 to 16.62	5.8 to 58	40 to 400	P000UBA0GB
	K	G	Green	2.33 to 6.46	8.82 to 24.45	5.8 to 58	40 to 400	P000UBA0GG
External Adjustment	L	White	Black	0.44 to 1.81	1.67 to 6.85	2.5 to 30	17 to 210	P000UBAEYB
	M	White	Green	0.691 to 2.68	2.62 to 10.14	2.5 to 30	17 to 210	P000UBAEYG
	N	White	Red	1.22 to 3.60	4.62 to 13.63	2.5 to 29	17 to 200	P000UBAEYR
	P	Grey	Black	0.607 to 2.71	2.30 to 10.26	5.1 to 58	35 to 400	P000UBAEGB
	R	Grey	Green	1.05 to 3.95	3.97 to 14.95	5.1 to 58	35 to 400	P000UBAEGG
	S	Grey	Red	1.79 to 5.57	6.78 to 21.08	4.4 to 58	30 to 400	P000UBAEGR
	AC	Cap	Tan	2.73 to 11.70	0.46 to 13.40	5.1 to 116	35 to 800	P000UBPPAC

5.0 CERTIFICATIONS/LISTINGS

Product manufactured by Victaulic and/or certified suppliers in accordance with ISO-9001.

6.0 DIMENSIONS

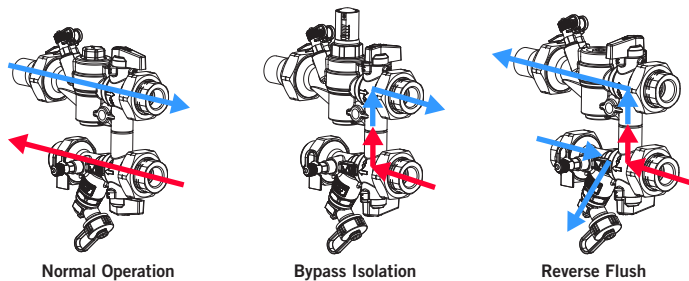


Size			Dimensions													Weight (Non-Hose Ready with High Flow)	
Nom.	IPS Actual Outside Dia.	CTS Actual Outside Dia.	A	B	C	C	D	E			F	G	ØH	J	K	Approx (Each)	
inches DN	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	Internal Adjust	External Adjust	High Flow	inches mm	inches mm	inches mm	inches mm	inches mm	lb	kg
½ DN15	0.840 21.3	0.625 15.9	3.15 80	7.54 192	5.58 142	5.61 142	3.13 77	5.25 132	6.25 157	5.75 144	2.21 56	1.18 30	0.39 10	2.17 55	0.71 18	4.7 2.1	
¾ DN20	1.050 26.9	0.875 22.2	3.15 80	7.84 199	5.59 142	5.62 143	3.13 77	5.25 132	6.25 157	5.75 144	2.21 56	1.18 30	0.39 10	2.17 55	0.71 18	5.5 2.5	
1 DN25	1.315 33.7	1.125 28.6	3.15 80	8.41 213	6.05 154	6.54 166	3.13 77	5.25 132	6.25 157	5.75 144	2.21 56	1.18 30	0.39 10	2.17 55	0.71 18	6.0 2.7	

- NOTES:
- Dimensions are for Female NPT connections; other choices may affect lengths, such as copper press adapters or sweat tailpieces.
 - Visit victaulic.com for design software downloads.

7.0 PERFORMANCE

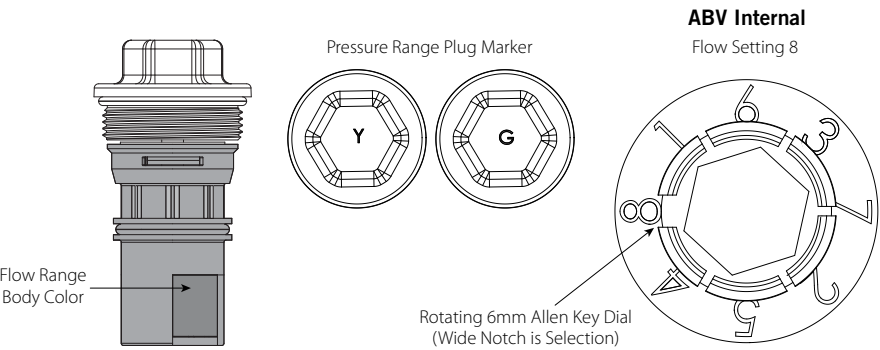
Valve Handle Operation Positions
Series UBA



Valve	Normal Operation	Bypass Isolation	Reverse Flush
Upstream (Red)	B	C	C
Downstream (Blue)	B	C	A

7.1 PERFORMANCE

ABV Internal Cartridge Flow Performance and Settings



Control Characteristic	Internal Adjust									
Cartridge Model	A		B		C		D		E	
Visual Plug Marker	Y		Y		Y		Y		Y	
Visual Body Color	Grey		Red		Blue		Black		Green	
Pressure Differential Range psid kPaD	2.2 to 18.9 15 to 130		2.9 to 18.9 20 to 130		2.9 to 18.9 20 to 130		2.9 to 18.9 20 to 130		2.9 to 18.9 20 to 130	
Flow Setting	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM
1	0.128	0.48	–	–	–	–	–	–	1.55	5.87
2	0.211	0.80	–	–	–	–	–	–	1.88	7.12
3	0.277	1.05	–	–	–	–	0.713	2.70	2.15	8.14
4	0.352	1.33	0.911	3.45	0.981	3.71	1.06	4.01	2.19	8.29
5	0.493	1.87	1.46	5.53	1.83	6.93	2.45	9.27	3.66	13.85
6	0.56	2.12	1.66	6.28	2.17	8.21	2.80	10.60	3.76	14.23
7	0.607	2.30	1.80	6.81	2.31	8.74	2.85	10.79	4.00	15.14
8	0.68	2.59	1.89	7.15	2.32	8.78	3.06	11.58	4.33	16.39

NOTE

- Accuracy greatest of either +/- 0.088 GPM or +/- 10% of controlled flow rate

Control Characteristic	Internal Adjust									
Cartridge Model	F		G		H		J		K	
Visual Plug Marker	G		G		G		G		G	
Visual Body Color	Grey		Red		Blue		Black		Green	
Pressure Differential Range psid kPaD	4.4 to 58 30 to 400		5.8 to 58 40 to 400		5.8 to 58 40 to 400		5.8 to 58 40 to 400		5.8 to 58 40 to 400	
Flow Setting	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM
1	0.185	0.70	1.24	4.69	0.894	3.38	0.946	3.58	2.33	8.82
2	0.30	1.14	2.17	8.21	1.44	5.45	1.52	5.75	2.95	11.17
3	0.392	1.48	2.56	9.69	2.87	10.86	3.75	14.20	3.32	12.57
4	0.515	1.95	2.75	10.41	3.43	12.98	4.21	15.94	3.83	14.50
5	0.748	2.83	2.88	10.90	3.46	13.10	4.26	16.13	5.79	21.92
6	0.837	3.17	–	–	3.49	13.21	4.39	16.62	5.85	22.14
7	1.01	3.82	–	–	–	–	–	–	6.21	23.51
8	1.10	4.16	–	–	–	–	–	–	6.46	24.45

NOTE

- Accuracy greatest of either +/- 0.088 GPM or +/- 10% of controlled flow rate

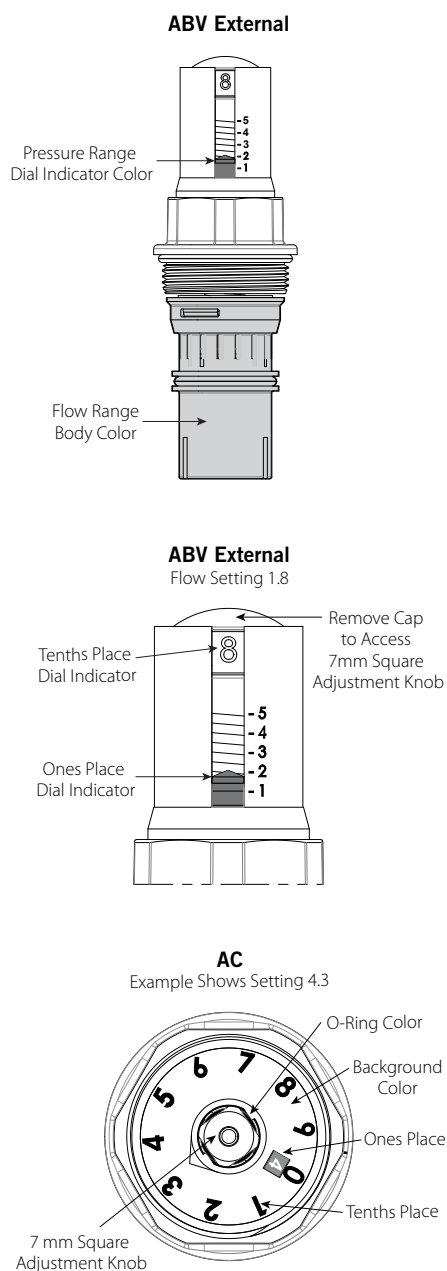
7.2 PERFORMANCE

ABV External Cartridge Flow Performance and Settings

Control Characteristic	External Adjust					
Cartridge Model	L		M		N	
Visual Dial Indicator	White		White		White	
Visual Body Color	Black		Green		Red	
Pressure Differential Range psid kPaD	2.5 to 30 17 to 210		2.5 to 30 17 to 210		2.5 to 29 17 to 200	
Flow Setting	GPM	LPM	GPM	LPM	GPM	LPM
1.0	0.44	1.67	0.691	2.62	1.22	4.62
1.1	0.475	1.80	0.741	2.80	1.29	4.88
1.2	0.509	1.93	0.791	2.99	1.36	5.15
1.3	0.543	2.06	0.841	3.18	1.44	5.45
1.4	0.578	2.19	0.89	3.37	1.51	5.72
1.5	0.612	2.32	0.94	3.56	1.58	5.98
1.6	0.646	2.45	0.99	3.75	1.66	6.28
1.7	0.681	2.58	1.04	3.94	1.73	6.55
1.8	0.715	2.71	1.09	4.13	1.80	6.81
1.9	0.749	2.84	1.14	4.32	1.88	7.12
2.0	0.784	2.97	1.19	4.50	1.95	7.38
2.1	0.818	3.10	1.24	4.69	2.02	7.65
2.2	0.852	3.23	1.29	4.88	2.09	7.91
2.3	0.887	3.36	1.34	5.07	2.16	8.18
2.4	0.921	3.49	1.39	5.26	2.23	8.44
2.5	0.955	3.62	1.44	5.45	2.30	8.71
2.6	0.99	3.75	1.49	5.64	2.37	8.97
2.7	1.02	3.86	1.54	5.83	2.44	9.24
2.8	1.06	4.01	1.59	6.02	2.51	9.50
2.9	1.09	4.13	1.64	6.21	2.57	9.73
3.0	1.13	4.28	1.69	6.40	2.64	9.99
3.1	1.16	4.39	1.74	6.59	2.70	10.22
3.2	1.20	4.54	1.79	6.78	2.76	10.45
3.3	1.23	4.66	1.84	6.97	2.83	10.71
3.4	1.26	4.77	1.89	7.15	2.89	10.94
3.5	1.30	4.92	1.94	7.34	2.94	11.13
3.6	1.33	5.03	1.98	7.50	3.00	11.36
3.7	1.37	5.19	2.03	7.68	3.06	11.58
3.8	1.40	5.30	2.08	7.87	3.11	11.77
3.9	1.44	5.45	2.13	8.06	3.17	12.00
4.0	1.47	5.56	2.18	8.25	3.22	12.19
4.1	1.50	5.68	2.23	8.44	3.27	12.38
4.2	1.54	5.83	2.28	8.63	3.32	12.57
4.3	1.57	5.94	2.33	8.82	3.36	12.72
4.4	1.61	6.09	2.38	9.01	3.41	12.91
4.5	1.64	6.21	2.43	9.20	3.45	13.06
4.6	1.68	6.36	2.48	9.39	3.49	13.21
4.7	1.71	6.47	2.53	9.58	3.53	13.36
4.8	1.75	6.62	2.58	9.77	3.57	13.51
4.9	1.78	6.74	2.63	9.96	3.60	13.63
5.0	1.81	6.85	2.68	10.14	3.60	13.63

NOTE

- Accuracy greatest of either +/- 5% of controlled flow rate or +/- 2% of maximum flow rate



7.2 PERFORMANCE (CONTINUED)

ABV External Cartridge Flow Performance and Settings

Control Characteristic	External Adjust							
Cartridge Model	P		R		S		AC	
Visual Dial Indicator	Gray		Gray		Gray		Cap	
Visual Body Color	Black		Green		Red		Tan	
Pressure Differential Range psid kPaD	5.1 to 58 35 to 400		5.1 to 58 35 to 400		4.4 to 58 30 to 400		5.1 to 116 35 to 800	
Flow Setting	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM
1.0	0.607	2.30	1.05	3.97	1.79	6.78	–	–
1.1	0.66	2.50	1.12	4.24	1.88	7.12	–	–
1.2	0.712	2.70	1.19	4.50	1.98	7.50	–	–
1.3	0.765	2.90	1.26	4.77	2.07	7.84	–	–
1.4	0.817	3.09	1.34	5.07	2.17	8.21	–	–
1.5	0.87	3.29	1.41	5.34	2.26	8.56	2.73	10.33
1.6	0.922	3.49	1.48	5.60	2.36	8.93	3.17	12.00
1.7	0.975	3.69	1.55	5.87	2.45	9.27	3.61	13.67
1.8	1.03	3.90	1.63	6.17	2.54	9.61	4.10	15.52
1.9	1.08	4.09	1.70	6.44	2.64	9.99	4.67	17.68
2.0	1.13	4.28	1.77	6.70	2.73	10.33	5.15	19.49
2.1	1.18	4.47	1.84	6.97	2.83	10.71	5.55	21.01
2.2	1.24	4.69	1.92	7.27	2.92	11.05	5.95	22.52
2.3	1.29	4.88	1.99	7.53	3.02	11.43	6.28	23.77
2.4	1.34	5.07	2.06	7.80	3.11	11.77	6.61	25.02
2.5	1.40	5.30	2.13	8.06	3.21	12.15	6.96	26.35
2.6	1.45	5.49	2.21	8.37	3.30	12.49	7.27	27.52
2.7	1.50	5.68	2.28	8.63	3.40	12.87	7.62	28.84
2.8	1.55	5.87	2.35	8.90	3.49	13.21	7.93	30.02
2.9	1.61	6.09	2.42	9.16	3.59	13.59	8.28	31.34
3.0	1.66	6.28	2.50	9.46	3.68	13.93	8.59	32.52
3.1	1.71	6.47	2.57	9.73	3.78	14.31	8.72	33.01
3.2	1.76	6.66	2.64	9.99	3.87	14.65	8.85	33.50
3.3	1.82	6.89	2.71	10.26	3.96	14.99	8.99	34.03
3.4	1.87	7.08	2.79	10.56	4.06	15.37	9.12	34.52
3.5	1.92	7.27	2.86	10.83	4.15	15.71	9.25	35.02
3.6	1.97	7.46	2.93	11.09	4.25	16.09	9.47	35.85
3.7	2.03	7.68	3.00	11.36	4.34	16.43	9.69	36.68
3.8	2.08	7.87	3.08	11.66	4.44	16.81	9.91	37.51
3.9	2.13	8.06	3.15	11.92	4.53	17.15	10.10	38.23
4.0	2.18	8.25	3.22	12.19	4.63	17.53	10.40	39.37
4.1	2.24	8.48	3.29	12.45	4.72	17.87	10.50	39.75
4.2	2.29	8.67	3.37	12.76	4.82	18.25	10.60	40.13
4.3	2.34	8.86	3.44	13.02	4.91	18.59	10.70	40.50
4.4	2.39	9.05	3.51	13.29	5.01	18.96	10.90	41.26
4.5	2.45	9.27	3.58	13.55	5.10	19.31	11.00	41.64
4.6	2.50	9.46	3.66	13.85	5.20	19.68	11.10	42.02
4.7	2.55	9.65	3.73	14.12	5.29	20.02	11.30	42.78
4.8	2.60	9.84	3.80	14.38	5.38	20.37	11.40	43.15
4.9	2.66	10.07	3.87	14.65	5.48	20.74	11.50	43.53
5.0	2.71	10.26	3.95	14.95	5.57	21.08	11.70	44.29

NOTE

- Accuracy greatest of either +/- 5% of controlled flow rate or +/- 2% of maximum flow rate

7.3 PERFORMANCE

Cv/Kv values for flow of water at +60°F/+16°C are shown in the table.

Formulas for Cv and Kv Values

$$\Delta P = Q^2 / C_v^2$$

$$\Delta P = Q^2 / K_v^2$$

Where:

$$Q = C_v \times \sqrt{\Delta P}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Flow Coefficient	C _v	K _v
Q (Flow)	GPM	m ³ /hr
ΔP (Pressure Drop)	psi	bar

Strainer Branch Flow Coefficient

Nominal inches DN	Size		Flow Coefficient C _v K _v
	IPS Actual Outside Diameter inches mm	CTS Actual Outside Diameter inches mm	
1/2 DN15	0.840 21.3	0.625 15.9	4.13 3.58
3/4 DN20	1.050 26.9	0.875 22.2	4.13 3.58
1 DN25	1.315 33.7	1.125 28.6	4.13 3.58

Return Shut-Off Valve Flow Coefficient

Nominal inches DN	Size		Flow Coefficient C _v K _v
	IPS Actual Outside Diameter inches mm	CTS Actual Outside Diameter inches mm	
1/2 DN15	0.840 21.3	0.625 15.9	13.50 11.68
3/4 DN20	1.050 26.9	0.875 22.2	13.50 11.68
1 DN25	1.315 33.7	1.125 28.6	13.50 11.68

8.0 NOTIFICATIONS

⚠ WARNING



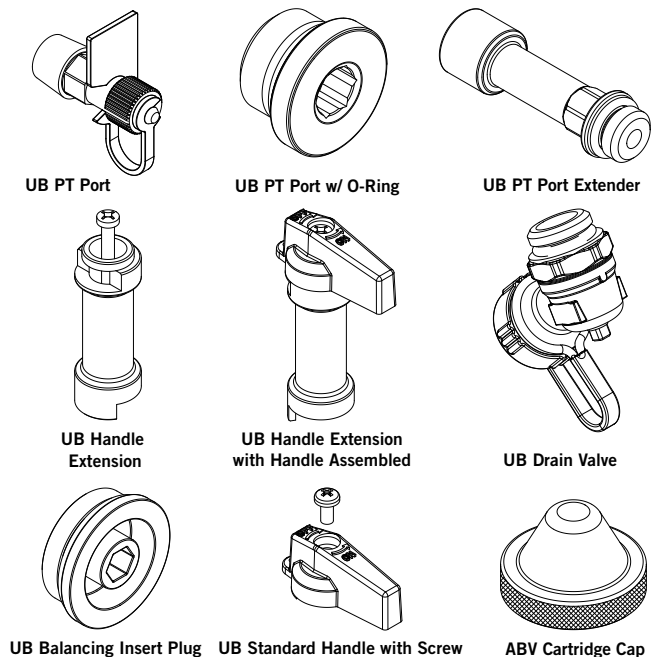
- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

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

9.0 REFERENCE MATERIALS

Accessories

Description	Part Code
UB PT Port Standard Length ¼" BSPT BLUE	P002UBPPTB
UB PT Port Standard Length ¼" BSPT RED	P002UBPPTR
UB PT Port Plug w/ O-Ring ¼" BSPP	P002UBPPLG
UB PT Port Extender 2" Length	P004UBP2XT
UB PT Port Extender or 4" Length	P004UBP4XT
UB Standard Handle (with RED screw / kit)	P004UBPRHL
UB Standard Handle (with BLUE screw / kit)	P004UBPBHL
UB Handle Extension 2" Length CW617	P004UBP2HL
UB Handle Extension 4" Length CW617	P004UBP4HL
Replacement Strainer Screen (20 Mesh, 800 µm)	P004UBPSTN
UB Strainer Plug O-Ring	P004UBPORG
UB Drain Valve	P000UBPDRN
Cartridge Keys	P000UBA0KY
Balancing Insert Plug	P004UBPPLG
ABV Cartridge Cap	P004UBP006



9.1 REFERENCE MATERIALS

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

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

[106.30: Victaulic Series UH1 Braided Flexible Hose](#)

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

[I-UBA: Victaulic Series UBA Installation and Maintenance Instructions](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation 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, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at victaulic.com.

Warranty

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

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