

Victaulic KOIL-KIT™ Coil Pack

Series 799/79V/79B/79A

Series 78Y/78T/78U and Coil Hoses



Series 78Y



Series 78T



Series 78U

1.0 PRODUCT DESCRIPTION

Available Sizes

- ½ – 2"/DN15 – DN50

Function

- Provides simplified coil circuit installation that meets optimal hydronic system design requirements

Maximum Working Pressure

- Up to 400 psi/2758 kPa/28 bar

NOTES

- The coil pack's maximum working pressure is equivalent to the pressure rating of the hose used on it.
- If QuickVic™ SD ends are used, the coil pack's maximum working pressure is 300 psi/2068 kPa/21 bar.

Maximum Operating Temperature

- +230°F/+110°C

Application

- Hot and cold water, including treated and untreated water systems
- Victaulic offers (4) KOIL-KIT™ Coil Packs: Series 799, Series 79V, Series 79B and Series 79A
 - Each KOIL-KIT™ Coil Pack may include:
 - (1) Series 78Y Y-Strainer/Ball Valve Combination or (1) Series 78T Ball Valve Union Combination
 - (2) Coil Hoses
 - (1) Series 78U Union Port Fitting
 - Various balancing valves – Manual, automatic or balancing and control

2.0 CERTIFICATION/LISTINGS



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

Series 78Y Y-Strainer/Ball Valve Combination

Body: Dezincification resistant (DZR) brass alloy

Union: DZR brass with EPDM O-ring

Tailpiece: DZR brass

Stem: Brass

Stem O-Ring Seals: EPDM

Ball: Plated brass

Handle: Steel with vinyl grip

Strainer: Stainless steel, 20 mesh

Strainer Seal: EPDM O-ring

Series 78T Ball Valve Union Combination

Body: DZR brass

Union: DZR brass with EPDM O-ring

Tailpiece: DZR brass

Stem: Brass

Stem O-Ring Seals: EPDM

Handle: Steel with vinyl grip

Series 78U Union Port Fitting

Body: DZR brass alloy

Union: DZR brass with EPDM O-ring

Seals: EPDM O-ring

Tailpiece: DZR brass alloy

Coil Hose

Hose: Braided stainless steel

Core: EPDM polymer with stainless ferrules

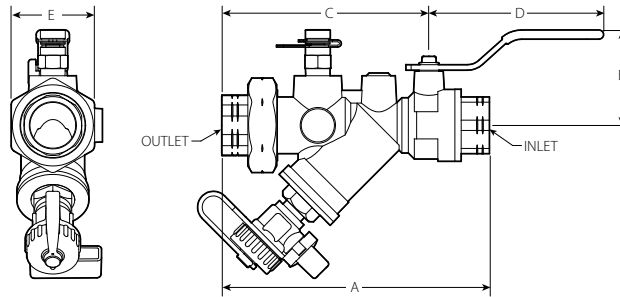
End Material: CW617 brass

NOTE

- Series 78Y/78T balls and stems may be provided with optional 316 stainless steel material.

4.0 DIMENSIONS

Series 78Y Y-Strainer/Ball Valve Combination



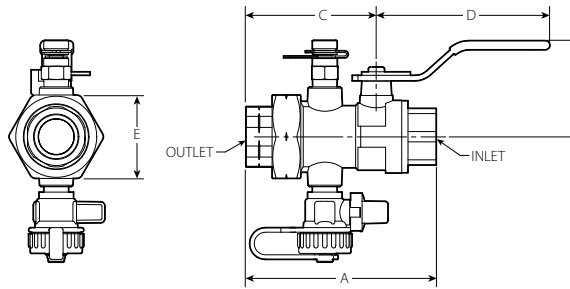
Size		Dimensions							Weight
Nominal Inlet x Outlet inches DN	Actual Outside Diameter Inlet x Outlet inches mm	A Sweat or Female Threaded End inches mm	A QuickVic™ SD x Female Threaded End inches mm	B inches mm	C inches mm	D inches mm	E inches mm	Approx. (Each) lb kg	
1/2 x 1/2 DN15	0.840 x 0.840 21.3 x 21.3	5.1 130	8.35 212	1.9 49	3.8 97	4.0 100	1.5 38	1.7 0.8	
3/4 x 1/2 DN20	1.050 x 0.840 26.9 x 21.3	5.9 150	9.14 232	2.0 51	4.5 114	4.0 100	1.8 46	2.4 1.1	
		6.1 155	9.14 232	2.0 51	4.6 117	4.0 100	1.8 46	2.4 1.1	
1 x 1/2 DN25	1.315 x 0.840 33.7 x 21.3	6.1 155	9.40 239	2.0 51	4.5 114	4.0 100	1.8 46	2.4 1.1	
		6.2 157	9.40 239	2.0 51	4.6 117	4.0 100	1.8 46	2.4 1.1	
		6.4 163	9.40 239	2.0 51	4.9 124	4.0 100	1.8 46	2.4 1.1	
		6.4 163	9.40 239	2.0 51	4.9 124	4.0 100	1.8 46	2.4 1.1	
1 1/4 x 3/4 DN32	1.660 x 1.050 42.4 x 26.9	7.8 198	11.10 282	2.4 61	5.9 150	5.3 135	2.6 66	5.4 2.4	
		8.0 203	11.10 282	2.4 61	6.1 155	5.3 135	2.6 66	5.4 2.4	
		8.0 203	11.10 282	2.4 61	6.1 155	5.3 135	2.6 66	5.4 2.4	
		8.0 203	11.10 282	2.4 61	6.1 155	5.3 135	2.6 66	5.4 2.4	
1 1/2 x 1 DN40	1.900 x 1.315 48.3 x 33.7	8.1 206	11.77 299	2.4 61	6.1 155	5.3 135	2.6 66	5.4 2.4	
		8.1 206	11.77 299	2.4 61	6.1 155	5.3 135	2.6 66	5.4 2.4	
		8.3 211	11.77 299	2.4 61	6.3 160	5.3 135	2.6 66	5.4 2.4	
		8.3 211	11.77 299	2.4 61	6.3 160	5.3 135	2.6 66	5.4 2.4	
2 x 1/4 DN50	2.375 x 1.660 60.3 x 42.4	11.2 284	14.87 378	3.1 79	8.5 216	5.9 151	3.3 84	11.3 5.1	
		11.2 284	14.87 378	3.1 79	8.5 216	5.9 151	3.3 84	11.5 5.2	
		11.2 284	14.87 378	3.1 79	8.5 216	5.9 151	3.3 84	11.5 5.2	
		11.2 284	14.87 378	3.1 79	8.5 216	5.9 151	3.3 84	11.5 5.2	

NOTES

- The Series 78Y is available with the following end configurations:
 - sweat x sweat union
 - sweat x female union
 - sweat x male union
 - female x sweat union
 - female x female union
 - female x male union
 - QuickVic SD x female union
- The QuickVic SD x female union uses a Style P07 coupling and a No. P40 threaded adapter.
- Optional tailpieces must be ordered for double reductions and for changing end configurations from sweat to threaded or threaded to sweat. If needed, specify tailpiece when ordering.

4.1 DIMENSIONS

Series 78T Ball Valve Union Combination



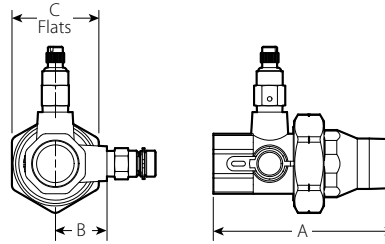
Size		Dimensions									Weight
Nominal Inlet x Outlet inches DN	Actual Outside Diameter Inlet x Outlet inches mm	A Sweat or Female Threaded End inches mm	A QuickVic™ SD x Female Threaded End inches mm	A Copper Press x Male Threaded End inches mm	B inches mm	C inches mm	D inches mm	E inches mm	Approx. (Each) lb kg		
1/2 x 1/2 DN15	0.840 x 0.840	4.1	7.35	5.29	1.9	2.8	4.0	1.5	1.4		
	21.3 x 21.3	105	187	134	49	71	100	37	0.6		
3/4 x 1/2 DN20	1.050 x 0.840	4.3	7.54	5.69	2.0	2.9	4.0	1.8	1.7		
	26.9 x 21.3	109	192	145	51	73	100	46	0.8		
3/4 x 3/4 DN20	1.050 x 1.050	4.4	7.54	5.69	2.0	2.9	4.0	1.8	1.7		
	26.9 x 26.9	112	192	145	51	73	100	46	0.8		
1 x 1/2 DN25	1.315 x 0.840	4.6	7.90	6.09	2.2	3.0	5.3	1.8	2.0		
	33.7 x 21.3	117	201	155	55	75	135	46	0.9		
1 x 3/4 DN25	1.315 x 1.050	4.8	7.90	6.09	2.2	3.0	5.3	1.8	2.0		
	26.9 x 26.9	121	201	155	55	75	135	46	0.9		
1 x 1 DN25	1.315 x 1.315	5.0	7.90	6.09	2.2	3.3	5.3	1.8	2.1		
	33.7 x 33.7	126	201	155	55	84	135	46	1.0		
1 1/4 x 3/4 DN32	1.660 x 1.050	5.2	8.50	6.86	2.4	3.2	5.3	2.6	3.6		
	42.4 x 26.9	131	216	174	60	80	135	67	1.6		
1 1/4 x 1 DN32	1.660 x 1.315	5.4	8.50	6.86	2.4	3.5	5.3	2.6	3.6		
	42.4 x 33.7	136	216	174	60	89	135	67	1.6		
1 1/4 x 1 1/4 DN32	1.660 x 1.660	5.4	8.50	6.86	2.4	3.5	5.3	2.6	3.5		
	42.4 x 42.4	136	216	174	60	89	135	67	1.6		
1 1/2 x 1 DN40	1.900 x 1.315	5.9	9.57	7.87	2.8	3.7	5.9	2.6	4.9		
	48.3 x 33.7	150	243	200	71	94	151	67	2.2		
1 1/2 x 1 1/4 DN40	1.900 x 1.660	5.9	9.57	7.87	2.8	3.7	5.9	2.6	4.9		
	48.3 x 42.4	150	243	200	71	94	151	67	2.2		
1 1/2 x 1 1/2 DN40	1.900 x 1.900	6.1	9.57	7.87	2.8	3.9	5.9	2.6	4.9		
	48.3 x 48.3	155	243	200	71	99	151	67	2.2		
2 x 1 1/4 DN50	2.375 x 1.660	6.9	10.57	9.21	3.0	3.8	5.9	3.3	7.1		
	60.3 x 42.4	174	268	234	77	97	151	83	3.2		
2 x 1 1/2 DN50	2.375 x 1.900	6.9	10.57	9.21	3.0	4.0	5.9	3.3	7.2		
	60.3 x 48.3	174	268	234	77	102	151	83	3.3		
2 x 2 DN50	2.375 x 2.375	6.9	10.57	9.21	3.0	4.1	5.9	3.3	7.3		
	60.3 x 60.3	174	268	234	77	104	151	83	3.3		

NOTES

- The Series 78Y is available with the following end configurations:
 sweat x sweat union
 sweat x female union
 sweat x male union
 female x sweat union
 female x female union
 female x male union
 QuickVic SD x female union
- The QuickVic SD x female union uses a Style P07 coupling and a No. P40 threaded adapter.
- Optional tailpieces must be ordered for double reductions and for changing end configurations from sweat to threaded or threaded to sweat. If needed, specify tailpiece when ordering.

4.2 DIMENSIONS

Series 78U Union Port Fitting



Size		Dimensions					Weight	
Nominal Inlet x Outlet inches DN	Actual Outside Diameter Inlet x Outlet inches mm	A Sweat or Female Threaded x Male Threaded End inches mm	A QuickVic™ SD x Male Threaded End inches mm	A Copper Press x Male Threaded End inches mm	B inches mm	C inches mm	Approximate (Each) lb kg	
1/2 x 1/2 DN15	0.840 x 0.840	3.48	6.73	4.67	0.84	1.46	0.7	
	21.3 x 21.3	89	171	119	21	37	0.3	
3/4 x 1/2 DN20	1.050 x 0.840	3.87	7.11	5.26	1.08	1.81	1.0	
	26.9 x 21.3	98	181	134	27	46	0.5	
	1.050 x 0.840	3.87	7.11	5.26	1.08	1.81	0.9	
1 x 1/2 DN25	1.315 x 0.840	4.03	7.33	5.52	1.08	1.81	1.0	
	33.7 x 21.3	102	186	140	27	46	0.5	
	1.050 x 0.840	4.03	7.33	5.52	1.08	1.81	1.1	
1 1/4 x 1/2 DN32	1.660 x 0.840	4.36	7.66	6.02	1.46	2.63	1.9	
	42.4 x 21.3	111	195	153	37	67	0.9	
	1.050 x 0.840	4.36	7.66	6.02	1.46	2.63	1.9	
	26.9 x 21.3	111	195	153	37	67	0.9	
	1.315 x 0.840	4.36	7.66	6.02	1.46	2.63	1.9	
1 1/2 x 3/4 DN40	1.900 x 1.050	4.19	7.86	6.16	1.46	2.63	2.2	
	48.3 x 26.9	106	200	156	37	67	1.0	
	1.315 x 1.050	4.19	7.86	6.16	1.46	2.63	2.2	
	33.7 x 26.9	106	200	156	36	67	1.0	
	1.660 x 1.050	4.19	7.86	6.16	1.46	2.63	2.3	
2 x 1 DN50	2.375 x 1.315	4.47	8.14	6.78	1.76	3.26	3.1	
	60.3 x 33.7	114	207	172	45	83	1.4	
	1.660 x 1.315	4.47	8.14	6.78	1.76	3.26	3.1	
	42.4 x 33.7	114	207	172	45	83	1.4	
	1.900 x 1.315	4.47	8.14	6.78	1.76	3.26	3.2	
2 x 2 DN50	2.375 x 2.375	4.47	8.14	6.78	1.76	3.26	3.2	
	60.3 x 60.3	114	207	172	45	83	1.5	

NOTES

- The Series 78Y is available with the following end configurations:
 sweat x sweat union
 sweat x female union
 sweat x male union
 female x sweat union
 female x female union
 female x male union
 QuickVic SD x female union
- The QuickVic SD x female union uses a Style P07 coupling and a No. P40 threaded adapter.
- Optional tailpieces must be ordered for double reductions and for changing end configurations from sweat to threaded or threaded to sweat. If needed, specify tailpiece when ordering.

4.3 OPTIONAL PARTS

Coil Hose (Optional)



Size inches DN	Inlet Options		Rated Pressure psi kPa	Minimum Bend Radius inches mm	Nominal Length inches mm	Weight
	A Male End Thread	B NPSM MNPT Swivel Union				Approx. (Each) lb kg
1/2 DN15	x 1/2 NPT	1/2	375 2585	2.6 66.7	24 610	0.5 0.2
3/4 DN20	x 3/4 NPT	3/4	300 2068	4.5 114.3	24 610	1.0 0.5
1 DN25	x 1 NPT	1	300 2068	5.5 139.7	24 610	1.5 0.7
1 1/4 DN32	x 1 1/4 NPT	1 1/4	225 1550	6.8 171.5	24 610	2.0 0.9
1 1/2 DN40	x 1 1/2 NPT	1 1/2	150 1034	8.4 212.7	24 610	4.4 2.0
2 DN50	x 2 NPT	2	150 1034	11.3 285.8	24 610	4.8 2.2

4.4 OPTIONAL PARTS

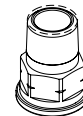
Series 78Y/78T/78U Union Tailpieces (Optional)



Female Tailpiece



Sweat Tailpiece



Male Tailpiece

Size		Victaulic Part Code		
Nominal inches		Female Tailpiece	Sweat Tailpiece	Male Tailpiece
1/2	x 1/2	P00478Y304	P00478Y504	P00478U404
3/4	x 1/2	P00678Y304	P00678Y504	P00678U404
	3/4	P00678Y306	P00678Y506	P00678U406
1	x 1/2	P00678Y304	P00678Y504	P00678U404
	3/4	P00678Y306	P00678Y506	P00678U406
	1	P00678Y310	P00678Y510	P00678U410
1 1/4	x 1/2	-	-	P01278U404
	3/4	P01278Y306	P01278Y506	P01278U406
	1	P01278Y310	P01278Y510	P01278U410
	1 1/4	P01278Y312	P01278Y512	P01278U412
1 1/2	x 1/2	-	-	P01278U404
	3/4	P01278Y306	P01278Y506	P01278U406
	1	P01278Y310	P01278Y510	P01278U410
	1 1/4	P91278Y312	P01278Y512	P01278U412
	1 1/2	P01278Y314	P01278Y514	P01278U414
2	x 1	-	-	P02078U410
	1 1/4	P02078Y312	P01278Y512	P02078U412
	1 1/2	P02078Y314	P01278Y514	P02078U414
	2	P02078Y320	P02078Y520	P02078U420

NOTE

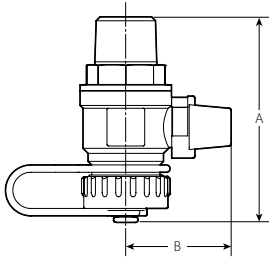
- The union tailpieces listed above can also be used on Series 78KH, 76K and 76V valves.

4.5 OPTIONAL PARTS

Hose End Drain Valve (Optional)

For Series 78Y, 78T & 78U

A hose end drain valve with a 3/4 garden hose thread is factory-installed on the Series 78Y and the Series 78T. This product can also be mounted on the Series 78U or provided loose for other piping needs.

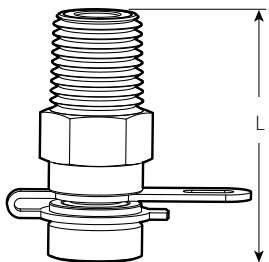


Size NPT inches mm	Dimensions		Part Code
	A inches mm	B inches mm	
1/4 6	2.04 52	1.37 35	P-002-78Y-DRN
1/2 13	2.74 70	1.53 39	P-004-78Y-DRN

4.6 OPTIONAL PARTS

Probe Port (Optional)

For Series 78Y, 78T & 78U



Connection Size	Dimensions	Part Code
	L inches mm	
1/4 NPT	1.55 39	P-002-78Y-PTP

4.7 OPTIONAL PARTS

Port Extender (Optional)

For Series 78Y, 78T & 78U

The port extender is used to extend accessories to clear 2"/50 mm or 4"/100 mm insulation (M x F ¼").

Extends probe port and air vent.

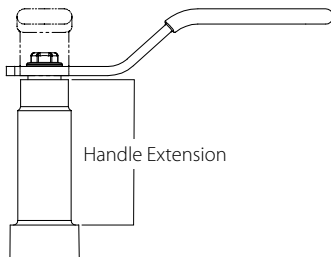


Length inches mm	Part Code
2 50	P01278Y2XT
4 100	P04378Y0XT

4.8 OPTIONAL PARTS

Handle Extension (Optional)

For Series 78Y & 78T



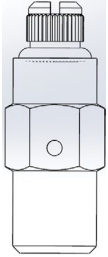
Valve	Valve Inlet Size	Victaulic Part Code	
		2" Handle Extension	4" Handle Extension
78Y	½ – 1"	P00478Y2HL	P00478Y4HL
78Y	1 ¼ – 1 ½"	P01278Y2HL	P01278Y4HL
78Y	2"	P02078Y2HL	P02078Y4HL
78T	½ – ¾"	P00478Y2HL	P00478Y4HL
78T	1 – 1 ¼"	P01278Y2HL	P01278Y4HL
78T	1 ½ – 2"	P02078Y2HL	P02078Y4HL

4.9 OPTIONAL PARTS

Air Vent

For Series 78Y & 78U

A manual air vent is factory-installed on the Series 78U. This product can also be mounted on the Series 78Y or provided loose for other piping needs.



Connection size	Part Code
¼ NPT	P-002-78U-MAV

4.10 OPTIONAL PARTS

Automatic Air Vent

Victaulic Part Code
P-002-78U-AAV

4.11 OPTIONAL PARTS

Replacement O-Rings

Valve Size inches	Series 78Y, 78T & 78U End Face O-Rings (Sold in Bags of 10)	Series 78Y Strainer O-Rings (Sold in Bags of 10)
½"	P004799ORG	G00478YGSK
¾ – 1"	P006799ORG	G00678YGSK
1¼ – 1½"	P012799ORG	G01278YGSK
2"	P020799ORG	G02078YGSK

4.12 OPTIONAL PARTS

Replacement Series 78Y Strainer Basket

Valve Size inches	Part Code
½"	P00478YSTN
¾ – 1"	P00678YSTN
1¼ – 1½"	P01278YSTN
2"	P02078YSTN

5.0 PERFORMANCE

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

Formulas for Cv and Kv values

$$\Delta P = Q^2/Cv^2 \quad \Delta P = Q^2/Kv^2$$

$$Q = Cv \times \sqrt{\Delta P} \quad Q = Kv \times \sqrt{\Delta P}$$

Series 78Y Y-Strainer/Ball Valve Combination

Size		Flow Coefficient (Fully Open)
Nominal inches DN	Actual Outside Diameter inches mm	Threaded Cv Kv
½ DN15	0.840 21.3	5.1 4.4
¾ DN20	1.050 26.9	7.8 6.7
1 DN25	1.315 33.7	7.4 6.4
1 ¼ DN32	1.660 42.4	28.8 25.0
1 ½ DN40	1.900 48.3	28.8 24.9
2 DN50	2.375 60.3	56.6 49.0

Series 78T Ball Valve Union Combination

Size		Flow Coefficient (Fully Open)
Nominal inches DN	Actual Outside Diameter inches mm	Threaded Cv Kv
½ DN15	0.840 21.3	10.4 9.0
¾ DN20	1.050 26.9	20.4 17.7
1 DN25	1.315 33.7	39.4 34.1
1 ¼ DN32	1.660 42.4	63.2 54.6
1 ½ DN40	1.900 48.3	98.4 85.1
2 DN50	2.375 60.3	169.3 146.4

Series 78U Union Port Fitting

Size		Flow Coefficient (Fully Open)
Nominal inches DN	Actual Outside Diameter inches mm	Threaded Cv Kv
½ DN15	0.840 21.3	9.8 6.1
¾ DN20	1.050 26.9	21.2 17.2
1 DN25	1.315 33.7	41.4 35.2
1 ¼ DN32	1.660 42.4	76.0 6.2
1 ½ DN40	1.900 48.3	103.0 6.8
2 DN50	2.375 60.3	159.5 137.9







5.0 PERFORMANCE (CONTINUED)

Coil Hose

Size		Nominal Length inches mm	Flow Coefficient (Fully Open)	
Nominal inches DN	Actual Outside Diameter inches mm		Straight Form C _v K _v	90° Bend C _v K _v
½ DN15	0.840 21.3	24 600	3.5 3.0	3.4 3.0
¾ DN20	1.050 26.9	24 600	10.0 8.7	9.6 8.3
1 DN25	1.315 33.7	24 600	18.9 16.3	18.3 15.8
1 ¼ DN32	1.660 42.4	24 600	33.0 28.4	32.6 28.1
1 ½ DN40	1.900 48.3	24 600	63.1 54.4	60.2 51.9
2 DN50	2.375 60.3	24 600	114.6 98.8	Not Recommended

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](#)
- [08.34: 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 TA Series TC/TCM](#)
- [08.46: Victaulic Differential Pressure Controller - TA Series 7PP](#)
- [08.53: Victaulic Combined Balancing and Control Valves TA Series 7FP](#)
- [08.55: Victaulic Pressure Independent Balancing and Modulating Control Valve TA Series 7MP](#)
- [I-KOIL-KIT: Victaulic Installation and Maintenance Instructions - KOIL-KIT™ Coil Pack](#)

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

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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

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