Victaulic® QuickVic™ SD Installation-Ready™ System


No. P10


No. P11


No. P20


Style P07


Style P08


Style P50


No. P47


No. P97


No. P40


No. P80


Series P89


PC3110
Cut & Mark Tool

1.0 PRODUCT DESCRIPTION

Available Sizes

- ½ – 2"

Pipe Material

- For use on carbon steel pipe conforming to ASTM A53, ASTM A106, ASTM A135 or Schedules 10 thorough 80

NOTE

- For use on other pipe materials, contact Victaulic.

Maximum Working Pressure

- 300 psi/2068 kPa/21 bar

Maximum Operating Temperature

- Dependent on gasket selection from section 3.0

Function

- Rigid couplings and fittings featuring patented Victaulic Installation-Ready™ technology
- QuickVic™ SD Installation-Ready™ products include patented "Leak-If-Not-Tightened" technology during initial installation; Seal is designed to leak until the coupling or fitting is mechanically secured on the pipe

PC3110 Cut & Mark Tool Capability

- ½ – 2" carbon steel pipe, Schedules 10 through 80
- Designed to cut the pipe and mark the pipe simultaneously
- Knurled marks display a clear insertion depth on the outside of the pipe for proper coupling/fitting installation

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	

2.0 CERTIFICATION/LISTINGS

Conforms to ASME B31.1, ASME B31.3 and ASME B31.9 code requirements.

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2008.

3.0 SPECIFICATIONS – MATERIAL

Couplings and Fittings

Housing: Ductile iron conforming to ASTM A536, Grade 65-45-12.

Housing Coating: (specify choice)

- ☐ Standard: Orange enamel.
- ☐ Optional: Zinc coating.
- ☐ Optional: Contact Victaulic with your requirements for other coatings.

Gasket: (specify choice[1])

- ☐ **Victaulic Grade "EHP" EPDM**
  EPDM (Red and Green stripes color code). Temperature range -30°F to +250°F/-34°C to +120°C. May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air, and many chemical services. NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.
- ☐ **Victaulic Grade "T" Nitrile**
  Nitrile (Orange stripe color code). Temperature range -20°F to +180°F/-29°C to +82°C. May be specified for petroleum products, hydrocarbons, air with oil vapors, and vegetable and mineral oils within the specified temperature range; not compatible for hot dry air over +140°F/+60°C and water over +150°F/+66°C. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.

[1] Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Seal Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449. Carbon steel hex nuts meeting the mechanical property requirements of ASTM A563 Grade B. Track bolts and hex nuts are zinc electroplated per ASTM B633 Fe/Zn 5, finish Type III.

Retainer: 301 stainless steel conforming to ASTM A666.

Coupling Linkage: High strength steel with comparable physical properties to that of the track bolt (ASTM A449). Linkage is zinc electroplated per ASTM B633 Fe/Zn 5, Type III finish.

No. P47 and No. P97 Dielectric Adapters: Copper silicon conforming to UNS C87850.

No. P40 Threaded Adapter (Male NPT x Plain End): Carbon steel meeting the chemical and mechanical property requirements of ASTM A53 Grade A.

No. P80 Threaded Adapter (Female NPT x Plain End): Ductile iron conforming to ASTM A536, Grade 65-45-12.

Full Port Ball Valve

Body: Dezincification resistant (DZR) brass, CW602N

Stem Seals: EPDM

Ball: Plated DZR brass, CW602N (standard) or 316 stainless steel (optional)

Stem: DZR brass, CW602N (standard) or 316 stainless steel (optional)

Ball Seals: Polytetrafluoroethylene (PTFE)

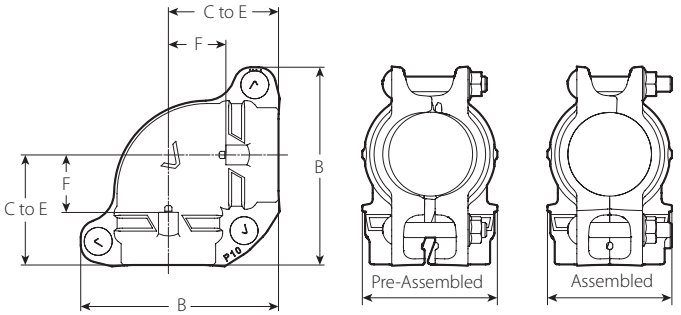
Handle: Steel with vinyl grip

PC3110 Cut & Mark Tool:

- Required Power Supply: Power drive with foot switch.

4.0 DIMENSIONS

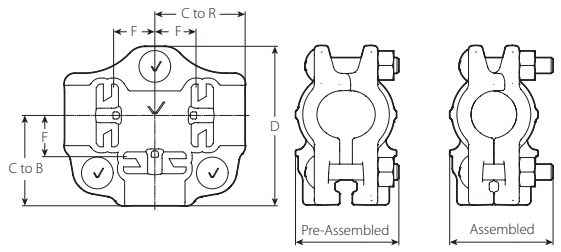
No. P10 90° Elbow



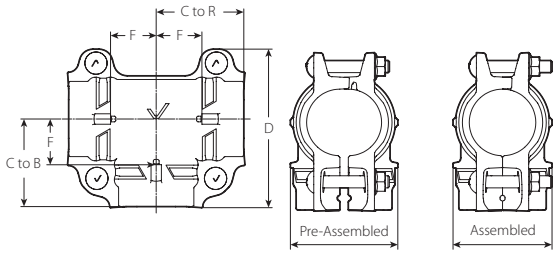
Size		Bolt/Nut		Dimensions					Weight
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches mm	F Takeout inches mm	C to E inches mm	B inches mm	Pre-Assembled inches mm	Assembled inches mm	Approximate (Each) lb kg
½	0.840 21.3	3	⅜ x 2 M10 x 51	0.88 22	2.13 54	3.88 99	2.16 55	1.90 48	1.8 0.8
¾	1.050 26.9	3	⅜ x 2 M10 x 51	1.00 25	2.13 54	4.00 102	2.50 64	2.15 55	2.1 1.0
1	1.315 33.7	3	⅜ x 2 M10 x 51	1.13 29	2.25 57	4.38 111	2.75 70	2.63 67	2.4 1.1
1 ¼	1.660 42.4	3	⅜ x 2 M10 x 51	1.38 35	2.50 64	4.75 121	3.00 76	2.75 70	2.8 1.3
1 ½	1.900 48.3	3	⅜ x 2 M10 x 51	1.38 35	3.00 76	5.38 137	3.25 83	3.00 76	3.4 1.5
2	2.375 60.3	3	7⁄16 x 2 ¾ M11 x 70	1.63 41	3.25 83	5.88 149	4.00 102	3.63 92	5.8 2.6

4.1 DIMENSIONS

No. P20 Tee



½ – ¾"/DN15 – DN20

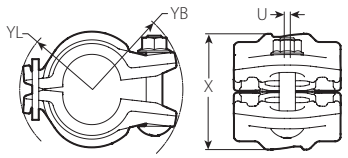


1 – 2"/DN25 – DN50

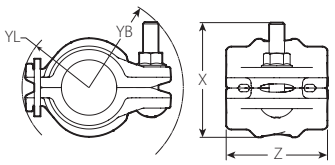
Size		Bolt/Nut		Dimensions						Weight
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches mm	F Takeout inches mm	C to B inches mm	C to R inches mm	D inches mm	Pre-Assembled inches mm	Assembled inches mm	Approximate (Each) lb kg
½	0.840 21.3	3	⅜ x 2 M10 x 51	0.88 22	2.13 54	2.13 54	3.63 92	2.38 60	2.38 60	2.4 1.1
¾	1.050 26.9	3	⅜ x 51 M10 x 2	1.00 25	2.25 57	2.25 57	3.88 98	2.50 64	2.50 64	2.8 1.3
1	1.315 33.7	4	⅜ x 2 M10 x 51	1.13 29	2.25 57	2.25 57	4.38 111	2.75 70	2.63 67	3.2 1.5
1 ¼	1.660 42.4	4	⅜ x 2 M10 x 51	1.38 35	2.50 64	2.50 64	4.75 121	3.00 76	2.75 70	3.7 1.7
1 ½	1.900 48.3	4	⅜ x 2 M10 x 51	1.38 35	3.00 76	3.00 76	5.38 137	3.25 83	3.00 76	4.6 2.1
2	2.375 60.3	4	7⁄16 x 2 ¾ M11 x 70	1.63 41	3.25 83	3.25 83	5.88 149	4.00 102	3.63 92	7.0 3.2

4.2 DIMENSIONS

Style P07 Coupling



Pre-Assembled

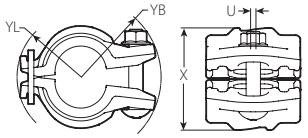


Assembled

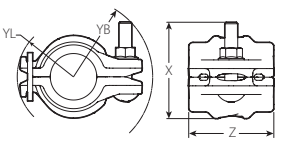
Size		Bolt/Nut		Dimensions								Weight
				Pre-Assembled			Assembled					
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches mm	Y_L inches mm	Y_B inches mm	X inches mm	Y_L inches mm	Y_B inches mm	X inches mm	U inches mm	Z inches mm	Approximate (Each) lb kg
½	0.840 21.3	1	⅜ x 2 M10 x 51	1.50 38	2.00 51	2.38 60	1.50 38	2.13 54	2.50 64	0.14 3.6	2.50 64	1.2 0.5
¾	1.050 26.9	1	⅜ x 2 M10 x 51	1.63 41	2.13 54	2.38 60	1.50 38	2.13 54	2.63 67	0.14 3.6	2.50 64	1.3 0.6
1	1.315 33.7	1	⅜ x 2 M10 x 51	1.75 44	2.25 57	2.75 70	1.63 41	2.25 57	2.75 70	0.14 3.6	2.50 64	1.4 0.6
1 ¼	1.660 42.4	1	⅜ x 2 M10 x 51	1.88 48	2.38 60	3.00 76	1.88 48	2.50 64	2.88 73	0.14 3.6	2.50 64	1.6 0.7
1 ½	1.900 48.3	1	⅜ x 2 ½ M10 x 64	2.13 54	2.63 67	3.38 86	2.00 51	2.88 73	3.50 89	0.14 3.6	3.25 83	2.5 1.1
2	2.375 60.3	1	7/16 x 2 ¾ M11 x 70	2.38 60	3.00 76	3.88 99	2.25 57	3.25 83	3.88 98	0.14 3.6	3.25 83	3.1 1.4

4.3 DIMENSIONS

Style P08 Slip Coupling

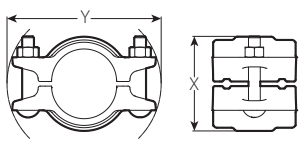


Pre-Assembled

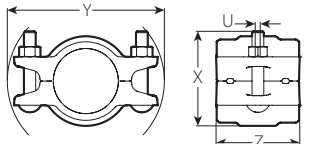


Assembled

½ – 1 ¼"/DN15 – DN32



Pre-Assembled



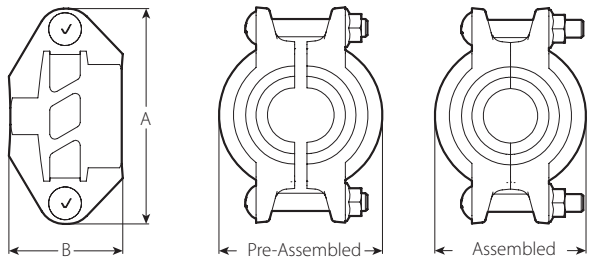
Assembled

1 ½ – 2"/DN40 – DN50

Size		Bolt/Nut		Dimensions											Weight
				Pre-Assembled				Assembled							
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches mm	Y_L inches mm	Y_B inches mm	Y inches mm	X inches mm	Y_L inches mm	Y_B inches mm	Y inches mm	X inches mm	U inches mm	Z inches mm		Approximate (Each) lb kg
½	0.840 21.3	1	⅜ x 2 M10 x 51	1.50 38	2.00 51	-	2.38 60	1.50 38	2.13 54	-	2.50 64	0.00 0	2.38 60		1.1 0.5
¾	1.050 26.9	1	⅜ x 2 M10 x 51	1.63 41	2.13 54	-	2.38 60	1.50 38	2.13 54	-	2.63 67	0.00 0	2.38 60		1.2 0.5
1	1.315 33.7	1	⅜ x 2 M10 x 51	1.75 44	2.25 57	-	2.75 70	1.63 41	2.25 57	-	2.75 70	0.00 0	2.38 60		1.4 0.6
1 ¼	1.660 42.4	1	⅜ x 2 M10 x 51	1.88 48	2.38 60	-	3.00 76	1.88 48	2.50 64	-	2.88 73	0.00 0	2.38 60		1.6 0.7
1 ½	1.900 48.3	2	⅜ x 2 M10 x 51	-	-	4.92 125	3.14 80	-	-	5.03 128	2.91 74	0.00 0	3.07 78		2.4 1.1
2	2.375 60.3	2	7/16 x 2 ¾ M11 x 70	-	-	5.74 146	3.52 89	-	-	5.84 148	3.52 89	0.00 0	3.11 79		3.0 1.4

4.4 DIMENSIONS

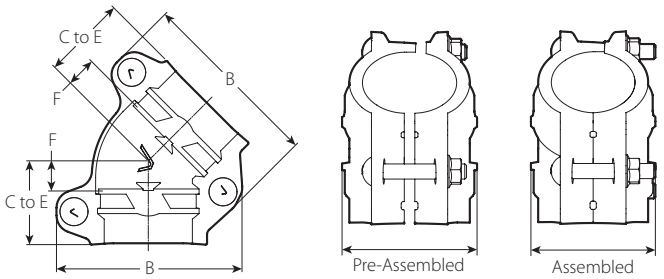
Style P50 Reducing Coupling



Size				Pipe End Separation	Bolt/Nut		Dimensions				Weight
Nominal			Actual Outside Diameter		Qty.	Size	A	B	Pre-Assembled	Assembled	Approximate (Each)
inches			inches mm	inches mm		inches mm	inches mm	inches mm	inches mm	inches mm	lb kg
¾	x	½	1.050 x 0.840 26.9 21.3	0.15 4	2	⅜ x 2 M10 x 51	3.65 93	2.52 64	2.48 63	2.48 63	1.7 0.8
1	x	¾	1.315 x 1.050 33.7 26.9	0.20 5	2	⅜ x 2 M10 x 51	3.96 101	2.53 64	2.74 70	2.61 66	1.9 0.9
1 ¼	x	¾	1.660 x 1.050 42.4 26.9	0.06 2	2	⅜ x 2 M10 x 51	4.76 121	2.41 61	3.30 84	2.98 76	2.6 1.2
		1	1.315 33.7	0.06 2	2	⅜ x 2 M10 x 51	4.55 116	2.39 61	3.28 83	2.96 75	2.3 1.0
1 ½	x	¾	1.900 x 1.050 48.3 26.9	0.06 2	2	⅜ x 2 M10 x 51	4.90 125	2.77 70	3.54 90	3.22 82	3.1 1.4
		1	1.315 33.7	0.06 2	2	⅜ x 2 M10 x 51	4.90 125	2.77 70	3.54 90	3.22 82	3.0 1.4
		1 ¼	1.660 42.4	0.06 2	2	⅜ x 2 M10 x 51	4.90 125	2.76 70	3.54 90	3.22 82	3.0 1.4
2	x	1	2.375 x 1.315 60.3 33.7	0.06 2	2	7/16 x 2 ¾ M11 x 70	5.31 135	2.80 71	4.05 103	3.74 95	3.8 1.7
		1 ¼	1.660 42.4	0.06 2	2	7/16 x 2 ¾ M11 x 70	5.31 135	2.80 71	4.09 104	3.78 96	3.8 1.7
		1 ½	1.900 48.3	0.06 2	2	7/16 x 2 ¾ M11 x 70	5.27 134	3.19 81	4.05 103	3.82 97	4.1 1.9

4.5 DIMENSIONS

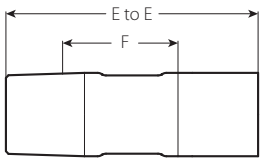
No. P11 45° Elbow



Size		Bolt/Nut		Dimensions					Weight
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches mm	F Takeout inches mm	C to E inches mm	B inches mm	Pre-Assembled inches mm	Assembled inches mm	Approximate (Each) lb kg
½	0.840 21.3	3	⅜ x 2 M10 x 51	0.60 15	1.78 45	3.46 88	2.43 62	2.43 62	0.7 0.3
¾	1.050 26.9	3	⅜ x 2 M10 x 51	0.73 19	1.91 49	3.76 96	2.54 64	2.54 64	2.4 1.1
1	1.315 33.7	3	⅜ x 2 M10 x 51	0.73 19	1.91 49	4.05 103	2.73 69	2.67 68	2.7 1.2
1 ¼	1.660 42.4	3	⅜ x 2 M10 x 51	0.74 19	1.92 49	4.41 112	3.08 78	2.84 72	3.2 1.5
1 ½	1.900 48.3	3	⅜ x 2 M10 x 51	0.75 19	2.28 58	4.69 119	3.32 84	2.96 75	3.7 1.7
2	2.375 60.3	3	⅞ x 2¾ M11 x 70	0.87 22	2.42 62	5.37 136	3.91 99	3.91 99	5.4 2.5

4.6 DIMENSIONS

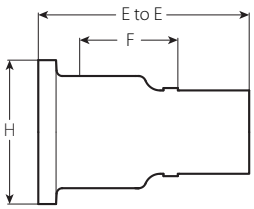
No. P40 Threaded Adapter (Male NPT x Plain End)



Size		Dimensions		Weight
Nominal inches	Actual Outside Diameter inches mm	E to E inches mm	F Takeout inches mm	Approx. (Each) lb kg
½	0.840 21.3	3.78 96	2.13 54	0.3 0.1
¾	1.050 26.9	3.79 96	2.13 54	0.3 0.2
1	1.315 33.7	3.98 101	2.13 54	0.4 0.2
1 ¼	1.660 42.4	4.01 102	2.13 54	0.6 0.3
1 ½	1.900 48.3	4.40 112	2.13 54	0.7 0.3
2	2.375 60.3	4.43 113	2.13 54	0.9 0.4

4.7 DIMENSIONS

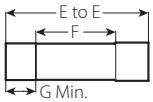
No. P80 Threaded Adapter (Female NPT x Plain End)



Size		Dimensions			Weight
Nominal inches	Actual Outside Diameter inches mm	E to E inches mm	F Takeout inches mm	H inches mm	Approx. (Each) lb kg
½	0.840 21.3	3.20 81	1.50 38	1.69 43	0.6 0.3
¾	1.050 26.9	3.22 82	1.50 38	1.95 50	0.9 0.4
1	1.315 33.7	3.33 85	1.50 38	2.27 58	1.2 0.6
1 ¼	1.660 42.4	3.35 85	1.50 38	2.65 67	1.6 0.7
1 ½	1.900 48.3	3.72 94	1.50 38	2.92 74	2.1 1.0
2	2.375 60.3	3.73 95	1.50 38	3.46 88	2.9 1.3

4.8 DIMENSIONS

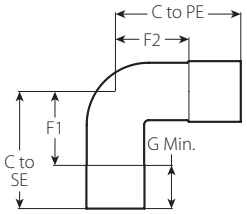
No. P47 Straight Dielectric Adapter (Sweat x Plain End)



Size		Dimensions			Weight
Nominal inches	Actual Outside Diameter inches mm	G Min (Sweat Depth) inches mm	End to End inches mm	F Takeout inches mm	Approx. (Each) lb kg
½	0.840 21.3	0.50 13	4.50 114	2.88 73	0.3 0.1
¾	1.050 26.9	0.75 19	4.75 121	2.88 73	0.5 0.2
1	1.315 33.7	0.91 23	4.91 125	2.88 73	0.7 0.3
1 ¼	1.660 42.4	0.97 25	4.97 126	2.88 73	0.9 0.4

4.9 DIMENSIONS

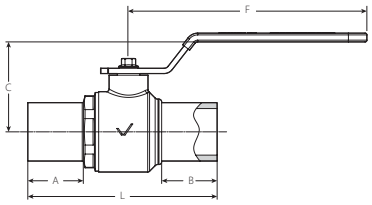
No. P97 90° Elbow Dielectric Adapter (Sweat x Plain End)

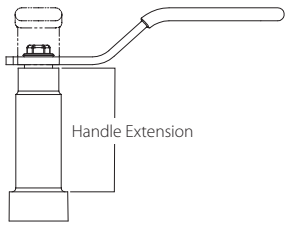


Size		Dimensions					Weight
Nominal inches	Actual Outside Diameter inches mm	G Min (Sweat Depth) inches mm	C to SE (Center to Sweat End) inches mm	C to PE (Center to Plain End) inches mm	F1 Copper Takeout inches mm	F2 Steel Takeout inches mm	Approx. (Each) lb kg
½	0.840 21.3	0.50 13	1.84 47	2.59 66	1.34 34	1.47 37	0.3 0.1
¾	1.050 26.9	0.75 19	2.09 53	2.59 66	1.34 34	1.47 37	0.4 0.2
1	1.315 33.7	0.91 23	2.54 65	2.72 69	1.63 41	1.60 41	0.7 0.3
1 ¼	1.660 42.4	0.97 25	2.82 72	2.88 73	1.85 47	1.76 45	1.0 0.5

4.10 DIMENSIONS

Series P89 Full Port Ball Valve



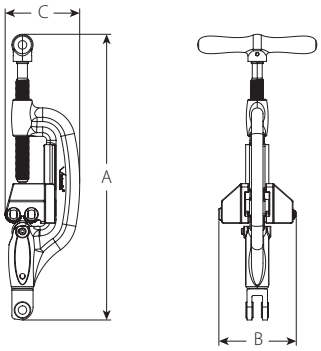


Size		Dimensions					Weight
Nominal inches	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	L inches mm	F inches mm	Approximate (Each) lb kg
½	0.840 21.3	1.25 32	1.25 32	2.50 64	4.00 101	4.25 108	0.6 0.3
¾	1.050 26.9	1.25 32	1.25 32	2.63 67	4.15 105	4.25 108	0.9 0.4
1	1.315 33.7	1.25 32	1.25 32	2.75 70	4.45 113	5.30 135	1.4 0.6
1 ¼	1.660 42.4	1.25 32	1.25 32	2.88 73	4.75 121	5.30 135	2.0 0.9
1 ½	1.900 48.3	1.63 41	1.63 41	3.00 76	6.10 155	6.10 155	3.7 1.7
2	2.375 60.3	1.63 41	1.63 41	3.63 92	6.40 163	6.10 155	5.4 2.5

Valve Inlet Size		
inches	2" Handle Extension	4" Handle Extension
½ – ¾	P-004-78Y-2HL	P-004-78Y-4HL
1 – 1 ¼	P-012-78Y-2HL	P-012-78Y-4HL
1 ½ – 2	P-020-78Y-2HL	P-020-78Y-4HL

4.11 DIMENSIONS

PC3110 Cut & Mark Tool



Dimensions			Weight
A inches mm	B inches mm	C inches mm	Approx. (Each) lb kg
17.00 432	4.61 117	4.44 113	10.3 4.7

NOTE

- Carriage not included with PC3110 Cut & Mark Tool.

4.12 UPCOMING PRODUCTS

The following QuickVic™ SD Installation-Ready™ System products are currently in development:

- No. P25 Reducing Tee
- No. P27 Reduce-On-The-Run Tee
- No. P60 Cap

Please contact Victaulic for more information on these products.

5.0 PERFORMANCE

Size		Maximum Joint Working Pressure[2]	Maximum Permissible End Load[2]
Nominal inches	Actual Outside Diameter inches mm	psi kPa	lb N
½	0.840 21.3	300 2068	330 1468
¾	1.050 26.9	300 2068	400 1779
1	1.315 33.7	300 2068	450 2002
1 ¼	1.660 42.4	300 2068	650 2891
1 ½	1.900 48.3	300 2068	850 3781
2	2.375 60.3	300 2068	1330 5916

[2] Working Pressure and End Load are total, from all internal and external loads, based on ANSI B36.10 sized carbon steel pipe, prepared in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

NOTE

- WARNING: FOR ONE-TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.

5.1 PERFORMANCE

Frictional Resistance

Size		Equivalent Lengths Based on Sched. 40 Pipe (C=120)[3]		
Nominal inches	Actual Outside Diameter inches mm	No. P10 90˚ Elbow ft m	No. P11 45˚ Elbow ft m	No. P20 Tee ft m
½	0.840 21.3	1.0 0.3	+	2.0 0.6
¾	1.050 26.9	1.5 0.5	+	2.5 0.8
1	1.315 33.7	2.0 0.6	+	3.0 0.9
1 ¼	1.660 42.4	2.5 0.8	+	3.5 1.1
1 ½	1.900 48.3	3.0 0.9	+	4.0 1.2
2	2.375 60.3	5.0 1.5	+	6.0 1.8

[3] Rounded to the nearest half foot.

\+ Please contact Victaulic for more information.

5.2 PERFORMANCE

Flow Characteristics for Series P89 Full Port Ball Valve

C_v/K_v values for flow of water at 60°F/16°C are shown in the table below. For additional details, contact Victaulic.

Formulas for Cv and Kv values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

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

Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

$$\Delta P = \frac{Q^2}{K_v^2}$$

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

Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

Size		Flow
Nominal inches	Actual Outside Diameter inches mm	Cv Kv
½	0.840 21.3	14.7 12.7
¾	1.050 26.9	28.5 24.7
1	1.315 33.7	56.3 48.7
1 ¼	1.660 42.4	114.0 98.6
1 ½	1.900 48.3	162.0 140.1
2	2.375 60.3	245.0 211.9

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

05.01: Victaulic Seal Selection Guide

I-P100: Victaulic Field Installation Handbook

TM-PC3110: Victaulic PC3110 Cut & Mark Tool Operating and Maintenance Instructions Manual

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. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation
Reference should always be made to the Victaulic installation handbook or installation instructions of 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 www.victaulic.com.

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

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