Victaulic® Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications Style 856

33.16

PGS™-300

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 12"/DN50 – DN300

Pipe Material

- Schedules 40 and 80 chlorinated polyvinyl chloride (CPVC) pipe per ASTM F441, 23447 minimum cell classification per ASTM D1784.
- Schedules 40 and 80 polyvinyl chloride (PVC) pipe per ASTM D1785, 12454 minimum cell classification per ASTM D1784.
- Schedules 10 and 40 stainless steel and gavanized carbon steel pipe, and Victaulic grooved fittings and valves.

Operating Temperature

- Schedules 40 and 80 CPVC pipe: +32˚F to +180˚F/0˚C to +82˚C.
- Schedules 40 and 80 PVC pipe: +32ºF to +140ºF/0ºC to +60ºC.

NOTE

- Operating temperature subject to pipe manufacturer's temperature limits.

Maximum Working Pressure

- See section 5.0 for pressure ratings and temperature reduction factors.

Function

- Intended for use in potable water systems.
- Provides a direct, single coupling connection for PGS-300 grooved end CPVC/PVC pipe or fittings to Original Groove System (OGS) grooved end galvanized carbon steel or stainless steel pipe, fittings or valves of the same nominal size.

NOTE

- For non-potable water systems, refer to publication 33.06: Victaulic Installation-Ready™ Transition Coupling Style 356.

Pipe Preparation

- The Style 856 Transition Coupling is exclusively for use in joining pipe and fittings featuring the Victaulic PGS-300 groove profile to pipe, fittings and valves featuring the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials).

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

WATER QUALITY ANSI/NSF 61 & 372

The Victaulic Grade P gasket supplied with the Style 856 Installation-Ready™ Transition Coupling is UL Classified in accordance with ANSI/NSF 61 and ANSI/NSF 372 as noted in section 3.0 Specifications – Material.

NOTE

- See publication 02.06: Victaulic Potable Water Approvals ANSI/NSF for potable water approvals if applicable.

3.0 SPECIFICATIONS – MATERIAL

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

Housing Coating: Blue enamel.

Gasket[1]: Grade "P" Fluoroelastomer Blend

P (Double blue stripe color code). Temperature range +0°F to +180°F/-18°C to +82°C. Specifically formulated for compatibility with potable water systems. Optimized for improved resistance to chlorine, chloramine and other typical potable water disinfectants. UL Classified 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.

[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.

NOTE

- Victaulic reserves the right to substitute equivalent and/or higher grade elastomer products.

Bolts/Nuts: (specify choice)

☐ **Standard:** Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449 (imperial) and ISO 898-1 Class 9.8 (M10-M16) Class 8.8 (M20 and greater). Carbon steel hex nuts meeting the mechanical property requirements of ASTM A563 Grade B (imperial - Heavy Hex nuts) and ASTM A563M Class 9 (metric - hex nuts). Track bolts and hex nuts are zinc electroplated per ASTM B633 ZN/FE5, finish Type III (imperial) or Type II (metric).

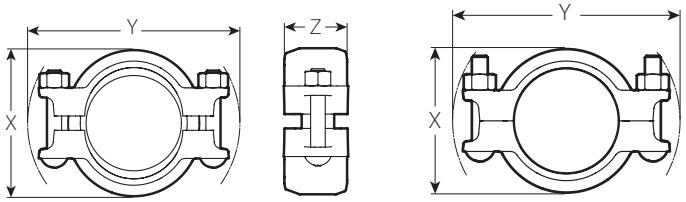
☐ **Optional:**

- ☐ **2 – 12"/DN50 – DN300:** Standard bolts/nuts as listed above, with fluoropolymer top coat.
- ☐ **2 – 8"/DN50 – DN200:[2]** Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel Heavy Hex nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating.
- ☐ **10 – 12"/DN250 – DN300:[2]** Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM A193, Class 2 (316 stainless steel), Grade B8M. Stainless steel Heavy Hex nuts meeting the mechanical property requirements of ASTM A194 Grade 8M Heavy Hex, with galling reducing coating.

[2] Optional bolts/nuts available in imperial size only.

4.0 DIMENSIONS

Style 856 Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications



Pre-Assembled Joint Assembled

Size		Pipe End Separation[3]	Bolt/Nut[4]		Dimensions					Weight
					Pre-Assembled (Installation-Ready™ Condition)		Joint Assembled			
Nominal inches DN	Actual Outside Diameter inches mm	Allowable inches mm	Qty.	Size inches mm	X inches mm	Y inches mm	X inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
2 DN50	2.375 60.3	0.15 3.8	2	⅜ x 2 ½ M10 × 64	3.99 101	5.61 142	3.50 89	5.50 140	2.20 56	2.6 1.2
2 ½	2.875 73.0	0.15 3.8	2	⅜ × 2 ½ M10 × 64	4.39 112	6.23 158	4.05 103	6.23 158	2.35 60	3.5 1.6
3 DN80	3.500 88.9	0.15 3.8	2	½ × 3 M12 × 76	5.13 130	7.31 186	4.65 118	7.20 183	2.26 57	4.3 2.0
4 DN100	4.500 114.3	0.15 3.8	2	½ × 3 ¼ M12 × 83	6.56 167	8.69 221	5.94 151	8.62 219	2.37 60	5.9 2.7
6 DN150	6.625 168.3	0.15 3.8	2	½ × 3 ¼ M12 × 83	8.64 219	10.69 272	8.02 204	10.52 267	2.59 66	8.1 3.7
8 DN200	8.625 219.1	0.22 5.6	2	¾ × 5 M20 × 127	11.27 286	14.39 366	10.50 267	14.22 361	2.85 72	17.6 8.0
10 DN250	10.750 273.0	0.20 5.1	2	¾ × 6 ¼ M20 × 159	13.35 339	16.91 430	12.68 322	16.71 424	2.86 73	22.8 10.3
12 DN300	12.750 323.9	0.20 5.1	2	¾ × 6 ¼ M20 × 159	15.30 389	18.75 476	14.64 372	18.53 471	2.85 72	24.9 11.3

[3] The Allowable Pipe End Separation dimension shown is for system layout purposes only. Style 856 Installation-Ready™ transition couplings are considered rigid connections and will not accommodate expansion/contraction or angular movement of the piping system. Contact Victaulic for torsional resistance information.

[4] Number of bolts required equals number of housing segments.

5.0 PERFORMANCE

Style 856 Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications

Pressure Rating When Transitioning from Schedule 80 CPVC Pipe At +73˚F/+23˚C to Schedule 40 Galvanized Carbon Steel Pipe or Schedule 40S Stainless Steel Pipe

Size		Maximum Working Pressure	Maximum Permissible End Load
Nominal inches DN	Actual Outside Diameter inches mm	psi kPa	lb N
2 DN50	2.375 60.3	400 2758	1772 7882
2 ½	2.875 73.0	420 2896	2726 12126
3 DN80	3.500 88.9	370 2551	3560 15836
4 DN100	4.500 114.3	320 2206	5089 22637
6 DN150	6.625 168.3	280 1931	9652 42934
8 DN200	8.625 219.1	250 1724	14607 64975
10 DN250	10.750 273.0	175 1207	15883 70651
12 DN300	12.750 323.9	175 1207	22343 99387

Pressure Rating When Transitioning from Schedule 40 CPVC/PVC Pipe At +73˚F/+23˚C to Schedule 40 Galvanized Carbon Steel Pipe or Schedule 40S Stainless Steel Pipe

Size		Maximum Working Pressure	Maximum Permissible End Load
Nominal inches DN	Actual Outside Diameter inches mm	psi kPa	lb N
2 DN50	2.375 60.3	280 1931	1240 5516
2 ½	2.875 73.0	260 1793	1688 7509
3 DN80	3.500 88.9	230 1586	2213 9844
4 DN100	4.500 114.3	220 1517	3499 15564
6 DN150	6.625 168.3	180 1241	6205 27601
8 DN200	8.625 219.1	140 965	8180 36386
10 DN250	10.750 273.0	120 827	10892 48450
12 DN300	12.750 323.9	110 758	14044 62471

5.0 PERFORMANCE (CONTINUED)

Pressure Rating When Transitioning from Schedule 80 PVC Pipe At +73˚F/+23˚C to Schedule 40 Galvanized Carbon Steel Pipe or Schedule 40S Stainless Steel Pipe

Size		Maximum Working Pressure psi kPa	Maximum Permissible End Load lb N
Nominal inches DN	**Actual Outside Diameter** inches mm		
2 DN50	2.375 60.3	380 2620	1683 7486
2 ½	2.875 73.0	380 2620	2467 10974
3 DN80	3.500 88.9	320 2206	3079 13696
4 DN100	4.500 114.3	320 2206	5089 22637
6 DN150	6.625 168.3	260 1793	8963 39869
8 DN200	8.625 219.1	240 1655	14022 62373
10 DN250	10.750 273.0	175 1207	15883 70651
12 DN300	12.750 323.9	175 1207	22343 99387

5.1 PERFORMANCE

Style 856 Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications

Maximum Working Pressure For Schedules 40 and 80 CPVC Pipe At Elevated Temperature

For the maximum working pressure rating of the joint at elevated temperature, multiply the working pressure rating of the coupling at +73°F/+23°C by the appropriate derating factor in the chart below.

Pressure capacity derating factors for operating temperatures above 73°F/23°C		
At 80°F/27°C	Multiply By	1.00
At 90°F/32°C	Multiply By	0.91
At 100°F/37°C	Multiply By	0.82
At 110°F/43°C	Multiply By	0.72
At 120°F/49°C	Multiply By	0.65
At 130°F/54°C	Multiply By	0.57
At 140°F/60°C	Multiply By	0.50
At 150°F/66°C	Multiply By	0.42
At 160°F/71°C	Multiply By	0.40
At 170°F/77°C	Multiply By	0.29
At 180°F/82°C	Multiply By	0.25

NOTE

- Derating factors are typical per the pipe manufacturer's recommendation in accordance with ASTM D2837 and PPI TR-3.

Maximum Working Pressure For Schedules 40 and 80 PVC Pipe at Elevated Temperature

For the maximum working pressure rating of the joint at elevated temperature, multiply the working pressure rating of the coupling at +73°F/+23°C by the appropriate derating factor in the chart below.

Pressure capacity derating factors for operating temperatures above 73°F/23°C		
At 80°F/27°C	Multiply By	0.88
At 90°F/32°C	Multiply By	0.75
At 100°F/37°C	Multiply By	0.62
At 110°F/43°C	Multiply By	0.51
At 120°F/49°C	Multiply By	0.40
At 130°F/54°C	Multiply By	0.31
At 140°F/60°C	Multiply By	0.22

NOTE

- Derating factors are typical per the pipe manufacturer's recommendation in accordance with ASTM D2837 and PPI TR-3.

5.2 PERFORMANCE

Style 856 Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications

Pressure Rating When Transitioning from Schedule 80 CPVC to Schedule 10 Galvanized Carbon Steel or Schedule 10S Stainless Steel

Size		73°F 23°C	80°F 27°C	90°F 32°C	100°F 37°C	110°F 43°C	120°F 49°C	130°F 54°C	140°F 60°C	150°F 66°C	160°F 71°C	170°F 77°C	180°F 82°C
Nominal inches DN	Actual Ouside Diameter inches mm	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa
2 DN50	2.375 60.3	400 2758	400 2758	360 2482	325 2241	285 1965	260 1793	225 1551	200 1379	165 1138	160 1103	115 793	100 689
2½	2.875 73.0	400 2758	400 2758	380 2620	340 2344	300 2068	270 1862	235 1620	210 1448	175 1207	165 1138	120 827	105 724
3 DN80	3.500 88.9	370 2551	370 2551	335 2310	300 2068	265 1827	240 1655	210 1448	185 1276	155 1071	145 1000	105 724	90 621
4 DN100	4.500 114.3	300 2068	300 2068	290 1999	260 1793	230 1586	205 1413	180 1241	160 1103	130 896	125 862	90 621	80 552
6 DN150	6.625 168.3	125 862	125 862	125 862	125 862	125 862	125 862	125 862	125 862	115 793	110 758	80 552	70 483
8 DN200	8.625 219.1	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	70 483	60 414
10 DN250	10.750 273.0	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	70 483	50 345	40 276
12 DN300	12.750 323.9	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	75 517	70 483	50 345	40 276

Pressure Rating When Transitioning from Schedule 40 CPVC to Schedule 10 Galvanized Carbon Steel or Schedule 10S Stainless Steel

Size		73°F 23°C	80°F 27°C	90°F 32°C	100°F 37°C	110°F 43°C	120°F 49°C	130°F 54°C	140°F 60°C	150°F 66°C	160°F 71°C	170°F 77°C	180°F 82°C
Nominal inches DN	Actual Ouside Diameter inches mm	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa
2 DN50	2.375 60.3	280 1931	280 1931	255 1758	230 1586	200 1379	180 1241	160 1103	140 965	115 793	110 758	80 552	70 483
2½	2.875 73.0	260 1793	260 1793	235 1620	210 1448	185 1276	165 1138	145 1000	130 896	105 724	100 689	75 517	65 448
3 DN80	3.500 88.9	230 1586	230 1586	205 1413	185 1276	165 1138	150 1034	130 896	115 793	95 655	90 621	65 448	55 379
4 DN100	4.500 114.3	220 1517	220 1517	200 1379	180 1241	155 1069	140 965	125 862	110 758	90 621	85 586	60 414	55 379
6 DN150	6.625 168.3	125 862	125 862	125 862	125 862	125 862	115 793	100 689	90 621	75 517	70 483	50 345	45 310
8 DN200	8.625 219.1	75 517	75 517	75 517	75 517	75 517	75 517	75 517	70 483	60 414	55 379	40 276	35 241
10 DN250	10.750 273.0	75 517	75 517	75 517	75 517	75 517	75 517	65 448	60 414	50 345	45 310	35 241	30 207
12 DN300	12.750 323.9	75 517	75 517	75 517	75 517	75 517	70 483	60 414	55 379	45 310	40 276	30 207	25 172

NOTE

- All working pressures listed above are based upon the use of Types 304/304L and 316/316L Schedule 10 stainless steel pipe, grooved in accordance with Victaulic specifications using RX roll sets.

5.3 PERFORMANCE

Style 856 Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications

Pressure Rating When Transitioning from Schedule 80 PVC to Schedule 10 Galvanized Carbon Steel or Schedule 10S Stainless Steel

Size		73°F 23°C	80°F 27°C	90°F 32°C	100°F 37°C	110°F 43°C	120°F 49°C	130°F 54°C	140°F 60°C
Nominal inches DN	Actual Ouside Diameter inches mm	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa
2 DN50	2.375 60.3	380 2620	330 2275	285 1965	235 1620	190 1310	150 1034	115 793	80 552
2½	2.875 73.0	380 2620	330 2275	285 1965	235 1620	190 1310	150 1034	115 793	80 552
3 DN80	3.500 88.9	320 2206	280 1931	240 1655	195 1344	160 1103	125 862	95 655	70 483
4 DN100	4.500 114.3	300 2068	280 1931	240 1655	195 1344	160 1103	125 862	95 655	70 483
6 DN150	6.625 168.3	125 862	125 862	125 862	125 862	125 862	100 689	80 552	55 379
8 DN200	8.625 219.1	75 517	75 517	75 517	75 517	75 517	75 517	75 517	50 345
10 DN250	10.750 273.0	75 517	75 517	75 517	75 517	75 517	70 483	50 345	35 241
12 DN300	12.750 323.9	75 517	75 517	75 517	75 517	75 517	70 483	50 345	35 241

Pressure Rating When Transitioning from Schedule 40 PVC to Schedule 10 Galvanized Carbon Steel or Schedule 10S Stainless Steel

Size		73°F 23°C	80°F 27°C	90°F 32°C	100°F 37°C	110°F 43°C	120°F 49°C	130°F 54°C	140°F 60°C
Nominal inches DN	Actual Ouside Diameter inches mm	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa	psi kPa
2 DN50	2.375 60.3	280 1931	245 1689	210 1448	170 1172	140 965	110 758	85 586	60 414
2½	2.875 73.0	260 1793	225 1551	195 1344	160 1103	130 896	100 689	80 552	55 379
3 DN80	3.500 88.9	230 1586	200 1379	170 1172	140 965	115 793	90 621	70 483	50 345
4 DN100	4.500 114.3	220 1517	190 1310	165 1138	135 931	110 758	85 586	65 448	45 310
6 DN150	6.625 168.3	125 862	125 862	125 862	110 758	90 621	70 483	55 379	40 276
8 DN200	8.625 219.1	75 517	75 517	75 517	75 517	70 483	55 379	40 276	30 207
10 DN250	10.750 273.0	75 517	75 517	75 517	70 483	60 414	45 310	35 241	25 172
12 DN300	12.750 323.9	75 517	75 517	75 517	65 448	55 379	40 276	30 207	20 138

NOTE

- All working pressures listed above are based upon the use of Types 304/304L and 316/316L Schedule 10 stainless steel pipe, grooved in accordance with Victaulic specifications using RX roll sets.

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.**
- **DO NOT attempt to install Victaulic couplings on pipe or fittings that show signs of damage.**
- **Consult with the pipe manufacturer for service recommendations and for questions concerning compatibility between the fluid media and pipe material.**
- **Victaulic Style 856 Transition Couplings SHALL NOT be used in systems containing compressed air or other gases.**
- **Compressed air or other gases SHALL NOT be used for system acceptance testing.**

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

⚠ WARNING

- **Victaulic RX roll sets must be used when grooving light-wall/thin-wall stainless steel pipe for use with Victaulic Couplings.**

Failure to use Victaulic RX roll sets when grooving light-wall/thin-wall stainless steel pipe may cause joint failure, resulting in serious personal injury and/or property damage.

NOTICE

- **Victaulic RX grooving rolls must be ordered separately. They are identified by a silver color and the designation RX on the front of the roll sets.**

7.0 REFERENCE MATERIALS

02.06: Victaulic Potable Water Approvals ANSI/NSF
05.01: Victaulic Seal Selection Guide
24.09: Victaulic Cut Grooving Tool for CPVC/PVC Pipe: Model CG1100
25.01: Victaulic Original Groove System (OGS) Groove Specifications
25.18: Victaulic PGS-300 Cut Groove Specifications
33.03: Victaulic CPVC Fittings
33.06: Victaulic Installation-Ready™ Transition Coupling Style 356
33.07: Victaulic Installation-Ready™ Rigid Coupling Style 357
33.08: Victaulic Reducing Coupling Style 358
33.17: Victaulic Installation-Ready™ Transition Coupling for CPVC/PVC Pipe in Potable Water Applications Style 857
33.18: Victaulic Reducing Coupling for CPVC/PVC Pipe in Potable Water Applications Style 858
I-350: Victaulic Field Installation Handbook: CPVC Piping Products
I-ENDCAP: Victaulic End Cap Installation Safety Instructions

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, 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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