

Victaulic® Coupling for Plain End HDPE Pipe Style 905



1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 14" IPS high-density polyethylene (HDPE) and IPS high-density polyethylene of raised temperature (PE-RT)
- 63 – 355 mm ISO high-density polyethylene (HDPE)

Pipe Material

- HDPE pipe conforming to ASTM D3035 and ASTM F714 or ISO 4427-2 (SDR 7 – 26)
- PE-RT pipe conforming to ASTM D3350, cell class PE445574C, ASTM F2619, and ASTM F714 (SDR 7 – 26)
- Contact Victaulic for other pipe materials

Maximum Working Pressure

- Meets or exceeds the pressure rating of the HDPE or PE-RT pipe

Operating Temperature

- Dependent upon pipe manufacturer rating and gasket selection
- Reference section 3.0 for gasket performance options
- Consult pipe manufacturer for pipe material performance limitations

Function

- Joins plain end HDPE pipe
- Utilizes patented Installation-Ready™ technology to eliminate loose parts

Pipe Preparation

- For use on plain end HDPE or PE-RT pipe

NOTE

- All references to HDPE within this document are inclusive of PE-RT

2.0 CERTIFICATION/LISTINGS



NOTE

- See [Publication 10.01](#): Victaulic Fire Protection Approval Reference Guide for details.
- See [Publication 02.06](#): Victaulic Approvals for Potable Water Products – ANSI/NSF 61 and ANSI/NSF 372 if applicable.
- WaterMark™ certification only applies to fusion bonded epoxy-coated couplings with Grade “E” EPDM gaskets. Contact Victaulic for further details.

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

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

Housing Coating: (specify choice)

Orange enamel for ANSI size and 355 mm ISO. Black enamel for ISO sizes and 5" IPS.

Liquid bonded epoxy.

Fusion bonded epoxy, galvanized and other coatings are available. Contact Victaulic for details.

Retaining Ring: Type 316 stainless steel.

Coupling Gasket: (specify choice¹)

Grade "T" Nitrile (Standard or Flush-Seal™)

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, 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

Grade "E" EPDM (Standard or Flush-Seal™)

EPDM (Green stripe color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. 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. NOT COMPATIBLE FOR PETROLEUM SERVICES OR STEAM SERVICES.

Grade "EF" EPDM

EPDM (Green "X" color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for hot and cold water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Also meets hot and cold potable water requirements per DVGW, KTW, ÖVGW, SVGW, and French ACS (Crecep), approved for W534, approved for EN681-1 Type WA cold potable, and Type WB hot potable water service. NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.

Grade "O" Fluoroelastomer

Fluoroelastomer (Blue stripe color code). Temperature range +20°F to +300°F/-7°C to +149°C. May be specified for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons. 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 Gasket Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

NOTE

- The maximum temperature ratings shown exceed the temperature ratings for HDPE pipe. Consult individual pipe manufacturers for specific temperature limits.

Hardware:

Bolts/Nuts: (specify choice²)

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), with blue (imperial) or black (metric) fluoropolymer top coat. Hardened steel washers conforming to ASTM F436 Type 3 (weathering steel).

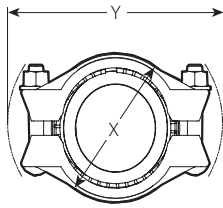
2 – 4", 63 – 110mm: Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel heavy hex nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating. Hardened steel washers conforming to ASTM F436 Type 3 (weathering steel).

5 – 14", 125 – 355 mm: 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. Hardened steel washers conforming to ASTM F436 Type 3 (weathering steel).

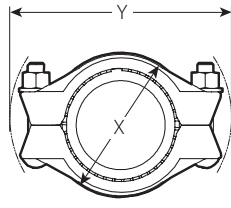
² Stainless steel bolts/nuts available in imperial size only

4.0 DIMENSIONS

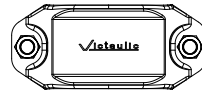
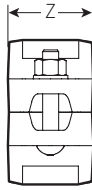
Style 905 – IPS Standard



Style 905 Pre-Assembled
(Installation-Ready
Condition)



Style 905 Joint Assembled

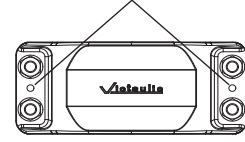


2 – 6" IPS



8" IPS

½" (12.7 mm) Dia. Lifting Holes³



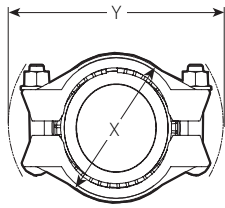
10 – 14" IPS

IPS Size		Bolt/Nut		Dimensions					Weight
Nominal inches	Actual Outside Diameter inches mm	Qty.	Size inches	Pre-assembled (Installation-Ready™ condition)		Joint Assembled			Approximate (Each) lb kg
				X inches mm	Y inches mm	X inches mm	Y inches mm	Z inches mm	
2	2.375 60.3	2	½ x ¾	3.88 99	6.38 162	3.50 89	6.63 168	4.13 105	5.5 2.5
3	3.500 88.9	2	⅝ x 3½	5.13 130	8.13 207	4.63 118	8.13 209	4.13 105	8.5 3.9
4	4.500 114.3	2	⅝ x 4¼	6.50 165	9.25 235	6.00 152	9.38 238	4.75 121	13.1 5.9
5	5.563 141.3	2	¾ x 4¼	7.63 194	10.88 276	6.88 175	11.25 286	4.88 124	18.7 8.5
6	6.625 168.3	2	¾ x 5	8.88 226	12.13 308	8.13 207	12.63 321	4.75 121	19.4 8.8
8	8.625 219.1	4	¾ x 6¼	11.00 279	14.50 368	10.00 254	14.88 378	5.00 127	28.0 12.7
10	10.750 273.0	4	⅞ x 6½	13.73 349	17.75 451	12.73 323	18.25 464	7.09 180	73.5 33.3
12	12.750 323.9	4	⅞ x 6½	15.83 402	19.63 499	14.83 377	20.07 510	7.11 181	86.5 39.2
14	14.000 355.6	4	1 ⅛ x 7	17.67 449	21.38 543	16.42 417	21.89 556	8.42 214	112.6 51.1

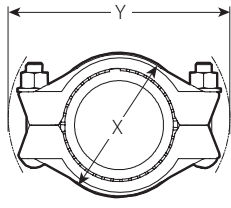
³ Unthreaded through holes for appropriately sized lifting eyes or hooks.

4.1 DIMENSIONS

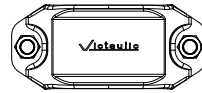
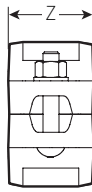
Style 905 – ISO Standard



Style 905 Pre-Assembled
(Installation-Ready Condition)



Style 905 Joint Assembled

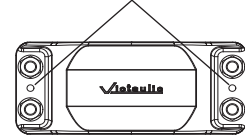


63 - 160 mm ISO



180 - 225 mm ISO

12.7 mm (1/2") Dia. Lifting Holes³



250 - 355 mm ISO

ISO Size	Bolt/Nut		Dimensions					Weight
			Pre-assembled (Installation-Ready™ condition)		Joint Assembled			
			Nominal mm	Qty.	Size ⁴ mm inches	X mm inches	Y mm inches	
63	2	M12 x 83 1/2 x 3 1/4	99 3.88	152 6.00	89 3.50	168 6.63	105 4.13	2.5 5.5
75	2	M16 x 83 5/8 x 3 1/4	114 4.50	184 7.25	102 4.00	194 7.63	105 4.13	3.7 8.1
90	2	M16 x 102 5/8 x 4	130 5.13	195 7.68	118 4.63	210 8.25	105 4.13	3.9 8.5
110	2	M16 x 102 5/8 x 4	159 6.25	219 8.63	143 5.75	232 9.13	121 4.75	5.9 13.0
125	2	M20 x 108 3/4 x 4 1/4	175 6.88	264 10.38	159 6.25	273 10.75	124 4.88	7.8 17.3
140	2	M20 x 108 3/4 x 4 1/4	194 7.63	276 10.88	175 6.88	286 11.25	124 4.88	8.5 18.7
160	2	M20 x 127 3/4 x 5	210 8.25	292 11.50	194 7.63	305 12.00	121 4.75	8.8 19.3
180	4	M20 x 159 3/4 x 6 1/4	248 9.75	337 13.25	219 8.63	353 13.88	127 5.00	11.5 25.4
200	4	M20 x 159 3/4 x 6 1/4	267 10.50	353 13.88	238 9.38	368 14.50	127 5.00	12.2 26.8
225	4	M20 x 159 3/4 x 6 1/4	295 11.63	373 14.68	267 10.50	387 15.25	127 5.00	13.0 28.7
250	4	M22 x 165 7/8 x 6 1/2	326 12.84	427 16.83	301 11.84	441 17.35	180 7.09	30.9 68.1
280	4	M22 x 165 7/8 x 6 1/2	359 14.14	458 18.03	334 13.14	470 18.50	180 7.09	35.4 78.0
315	4	M22 x 165 7/8 x 6 1/2	394 15.50	489 19.25	368 14.50	500 19.69	180 7.09	38.1 83.9
355	4	M27 x 178 1 1/8 x 7	449 17.67	543 21.38	417 16.42	556 21.89	214 8.42	51.1 112.6

³ Unthreaded through holes for appropriately sized lifting eyes or hooks.

⁴ Metric bolts/nuts standard, with the exception of North American, South American, and Australian shipments, where imperial sizes are standard.

5.0 PERFORMANCE

Style 905 – IPS Standard

Pressure Rating: joints made with Style 905 couplings meet the pressure rating of the HDPE pipe.

IPS Size	PE4710 HDPE Pipe ⁵ DR						
	7	9	11	13.5	17	21	26
Nominal Size inches	Pressure Rating psi kPa						
2 – 4	333 2295	250 1725	200 1380	160 1100	125 860	100 690	– –
6 – 14	333 2295	250 1725	200 1380	160 1100	125 860	100 690	80 550

⁵ HDPE pipe conforming to ASTM D3035 and F714 at 73°F/23°C. Reference plastic pipe manufacture data for derating factors at other temperatures

NOTE

- Victaulic coupling gaskets have been demonstrated to seal under full (29" of Hg/3.4 kPa [absolute]) vacuum requirements. Consult the specific HDPE pipe manufacturer for their recommended limitations regarding maximum vacuum as well as the effects of temperature and pipe ovality.
- Contact Victaulic for other pipe materials.

5.1 PERFORMANCE

Style 905 – ISO Standard

Pressure Rating: joints made with Style 905 couplings meet the pressure rating of the HDPE pipe.

ISO Size	PE100 HDPE Pipe ⁶ SDR						
	7.4	9	11	13.6	17	21	26
Nominal Size mm	Pressure Rating Bar kPa psi						
63 – 140	25 2500 363	20 2000 290	16 1600 232	12.5 1250 182	10 1000 145	8 800 116	– – –
160 – 355	25 2500 363	20 2000 290	16 1600 232	12.5 1250 182	10 1000 145	8 800 116	6 600 87

⁶ HDPE pipe conforming to ISO 4427-2 at 68°F/20°C. Reference plastic pipe manufacture data for derating factors at other temperatures

NOTE

- Victaulic coupling gaskets have been demonstrated to seal under full (29" of Hg/3.4 kPa [absolute]) vacuum requirements. Consult the specific HDPE pipe manufacturer for their recommended limitations regarding maximum vacuum as well as the effects of temperature and pipe ovality.
- Contact Victaulic for other pipe materials.

5.2 PERFORMANCE

Style 905 – IPS Standard

Allowable Tensile Load (ATL): joints made with style 905 couplings can sustain tensile loads noted below.

IPS Size Nominal Size inches	Allowable Tensile Load ⁷ DR						
	7 lb N	9 lb N	11 lb N	13.5 lb N	17 lb N	21 lb N	26 lb N
2	2369	1911	1599	1327	1071	878	–
	10540	8501	7114	5904	4765	3906	–
3	5146	4151	3473	2882	2327	1906	–
	22890	18463	15449	12821	10349	8478	–
4	8507	6861	5741	4765	3846	3151	–
	37839	30520	25539	21195	17108	14016	–
5	12292	10388	8692	7165	5823	4815	–
	54678	46208	38664	31872	25902	21418	–
6	18437	14871	12444	10327	8336	6829	5568
	82013	66151	55353	45938	37081	30377	24768
8	31200	25200	21100	17500	14100	11574	9438
	138784	112095	93857	77844	62720	51484	41982
10	48500	39100	32800	27200	21900	17900	14662
	215738	173926	145901	120991	97416	79623	65220
12	68300	55100	46100	38300	30900	25200	20625
	303814	245096	205062	170366	137449	112095	91745
14	72000	64000	55600	46100	37200	30400	24867
	320270	284686	247320	205062	165473	135226	110614

⁷ Allowable tensile loads shown are for straight pulling of unpressurized assembled pipe sections for a maximum period of one half hour at 68°F/20°C. Consult pipe manufacturer's recommendation for ATL reduction factors at elevated temperatures.

5.3 PERFORMANCE

Style 905 – ISO Standard

Allowable Tensile Load (ATL): joints made with style 905 couplings can sustain tensile loads noted below.

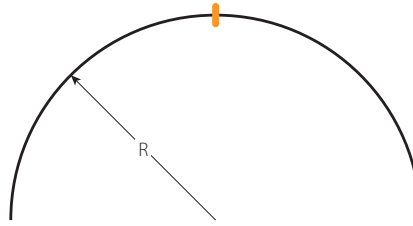
ISO Size Nominal Size mm	Allowable Tensile Load ⁸ SDR						
	7.4 N lb	9 N lb	11 N lb	13.6 N lb	17 N lb	21 N lb	26 N lb
63	11076	9360	7832	6456	5247	4297	–
	2490	2104	1761	1451	1179	966	–
75	15702	13269	11103	9150	7437	6094	–
	3530	2983	2496	2057	1672	1370	–
90	22616	19112	15992	13182	10713	8776	–
	5084	4297	3595	2864	2408	1973	–
110	33748	28519	23864	19671	15987	13096	–
	7587	6411	5365	4422	3594	2944	–
125	43610	36854	30840	25422	20658	16921	–
	9804	8285	6933	5715	4644	3804	–
140	54678	46208	38664	31872	25902	21218	–
	12292	10388	8692	7165	5823	4770	–
160	71440	60372	50517	41641	33841	27721	22606
	16061	13572	11357	9361	7608	6232	5082
180	90415	76407	63934	52698	42827	35083	28611
	20326	17177	14373	11847	9628	7887	6432
200	111561	94276	78889	65029	52849	43290	35301
	25080	21194	17735	14619	11881	9732	7936
225	141271	119381	99898	82345	66919	54820	44705
	31759	26838	22458	18512	15044	12324	10050
250	173925	146791	122770	101419	82292	67613	54713
	39100	33000	27600	22800	18500	15200	12300
280	218408	184601	154576	127219	103421	84516	68947
	49100	41500	34750	28600	23250	19000	15500
315	276679	233531	195721	161025	130777	107202	87185
	62200	52500	44000	36200	29400	24100	19600
355	351410	296695	248565	204617	166363	136116	110761
	79000	66700	55880	46000	37400	30600	24900

⁸ Allowable tensile loads shown are for straight pulling of unpressurized assembled pipe sections for a maximum period of one half hour at 68°F/20°C. Consult pipe manufacturer's recommendation for ATL reduction factors at elevated temperatures.

5.4 PERFORMANCE

Style 905 – IPS Standard

Bend Radius: joints made with style 905 couplings can sustain a radius as recommended by the Plastic Pipe Institute (PPI) in the Handbook of PE Pipe (2nd ed, Chapter 7, Table 4).

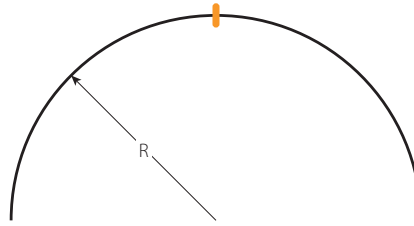


IPS Size Nominal Size inches	Minimum Recommended Bend Radius DR						
	7 inches mm	9 inches mm	11 inches mm	13.5 inches mm	17 inches mm	21 inches mm	26 inches mm
2	48 1207	48 1207	59 1508	59 1508	64 1629	155 3937	– –
3	70 1778	70 1778	88 2223	88 2223	95 2400	95 2400	– –
4	90 2286	90 2286	113 2858	113 2858	122 3086	122 3086	– –
5	111 2813	111 2813	138 3516	138 3516	149 3797	149 3797	– –
6	133 3366	133 3366	166 4207	166 4207	179 4543	179 4543	225 5715
8	173 4382	173 4382	216 5477	216 5477	233 5915	233 5915	293 7442
10	215 5461	215 5461	269 6826	269 6826	290 7372	290 7372	366 9296
12	255 6477	255 6477	319 8096	319 8096	344 8744	344 8744	434 11024
14	280 7112	280 7112	350 8890	350 8890	378 9601	378 9601	476 12090

5.5 PERFORMANCE

Style 905 – ISO Standard

Bend Radius: joints made with style 905 couplings can sustain a bending radius as recommended by the Plastic Pipe Institute (PPI) in the Handbook of PE Pipe (2nd ed, Chapter 7, Table 4).



ISO Size Nominal Size mm	Minimum Recommended Bend Radius SDR						
	7.4 mm inches	9 mm inches	11 mm inches	13.6 mm inches	17 mm inches	21 mm inches	26 mm inches
63	1266 50	1266 50	1582 62	1582 62	1709 67	4090 161	– –
75	1507 59	1507 59	1884 74	1884 74	2035 80	4877 192	– –
90	1809 71	1809 71	2261 89	2261 89	2442 96	2442 96	– –
110	2210 87	2210 87	2762 109	2762 109	2983 117	2983 117	– –
125	2512 99	2512 99	3140 124	3140 124	3391 134	3391 134	– –
140	2813 111	2813 111	3516 138	3516 138	3797 149	3797 149	– –
160	3215 127	3215 127	4019 158	4019 158	4340 171	4340 171	5461 215
180	3617 142	3617 142	4521 178	4521 178	4883 192	4883 192	6147 242
200	4018 158	4018 158	5022 198	5022 198	5424 214	5424 214	6833 269
225	4521 178	4521 178	5652 223	5652 223	6104 240	6104 240	7671 302
250	5000 197	5000 197	6250 246	6250 246	6750 266	6750 266	8534 336
280	5600 220	5600 220	7000 276	7000 276	7560 298	7560 298	9550 376
315	6300 248	6300 248	7875 310	7875 310	8505 335	8505 335	10744 423
355	7100 280	7100 280	8875 349	8875 349	9585 377	9585 377	12116 477

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 may cause joint failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

[I-900: HDPE Products Installation and Assembly Manual](#)

[I-905.REUSE: Victaulic Style 905 Reuse Instructions](#)

[IT-905: Style 905 Installation Tag](#)

[IT-905.FS: Style 905 with Flush-Seal™ Gasket Installation Instructions](#)

[05.01: Gasket Selection Guide](#)

[19.09: Style 908 Coupling for Double Grooved HDPE pipe](#)

[19.10: Style 907 Transition Coupling for HDPE-to-Steel](#)

[19.11: HDPE Plain End Fittings](#)

[19.12: Style 904 Flange Adapter for HDPE-to-Flanged Pipe](#)

[29.01: Terms and Conditions/Warranty](#)

[I-ENDCAP: Victaulic End Caps Installation 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, 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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