

Victaulic® AGS™ Flexible Coupling

Style W77



14 – 24"/350 – 600 mm sizes
Patented



26 – 60"/650 – 1500 mm sizes
Patented



62 – 72"/1550 & 1800 mm sizes
Patented



1.0 PRODUCT DESCRIPTION

Available Sizes

- 14 – 72"/DN350 - DN1800

Maximum Working Pressure

- 14 – 24"/DN350 – DN600: 350 psi/2400 kPa
- 26 – 42"/DN350 – DN950: 300 psi/2065 kPa
- 44 – 50"/DN1100 – DN1250: 232 psi/1600 kPa
- 54 – 62"/DN1350 – DN1550: 175 psi/1200 kPa
- 72"/DN1800: 125 psi/875 kPa

Function

- Unique wedge-shaped key profile increases allowable pipe end separation, resulting in easier assembly.
- Style W77 AGS coupling in 26 – 72"/650 – 1800 mm sizes, features lifting lugs integrated into the housings to help ease handling during installation.
- Provide limited linear and angular pipe movement at the pipe joint that can be used to compensate for thermal growth of piping systems, vibration attenuation, seismic, differential settlement and other applications requiring flexibility.

NOTES

- Style W77 AGS couplings are provided with FlushSeal® gaskets for a variety of services. Please specify gasket grade when ordering. Please refer to [publication 05.01](#) for gasket service ratings.
- Style W77 AGS flexible couplings can also be used on abrasive/slurry services in combination with an AGS Vic-Ring. See [publication 16.12](#).

2.0 CERTIFICATION/LISTINGS



NOTES

- Refer to [submittal 02.06](#) for a full list of approval and listing data.
- Refer to [submittal 10.01](#) for a full list of fire protection regulatory approvals.

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 A-536, grade 65-45-12.

Optional Housing: Ductile iron conforming to ASTM A-395, grade 65-45-15 available upon special request.

Housing Coating: (specify choice)

Standard: Orange enamel.

Optional: Hot dipped galvanized and others.

Optional: Fusion Bonded Epoxy.

NOTE

- For additional coating options contact Victaulic.

Coupling Gasket: (specify choice¹)

Grade “E” FlushSeal EPDM

EPDM (Green stripe color code). Temperature range –30°F to +230°F/–34°C to +110°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. 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 USE WITH PETROLEUM SERVICES OR STEAM SERVICES.

Grade “T” Nitrile

Nitrile (Orange color code). Temperature range –20°F to +180°F/–29°C to +82°C. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F/+66°C or for hot dry air over +140°F/+60°C.

Grade “L” Silicone

Silicone (Red color code). Temperature range –30°F to +350°F/–34° C to +177° C. May be specified for dry heat, air without hydrocarbons to +350°F/+177°C and certain chemical 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.

Bolts/Nuts: (specify choice²)

Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449.

Carbon steel heavy hex nuts meeting the mechanical property requirements of ASTM A563 Grade B. Track bolts and heavy hex nuts are zinc electroplated per ASTM B633 ZN/FE5, finish Type III (imperial) or Type II (metric).

Bolts - Oval Neck Track Bolts or Studs. Stainless steel, meeting the mechanical property requirements of ASTM A193 Grade B8M, Class 2 (316 Stainless Steel).

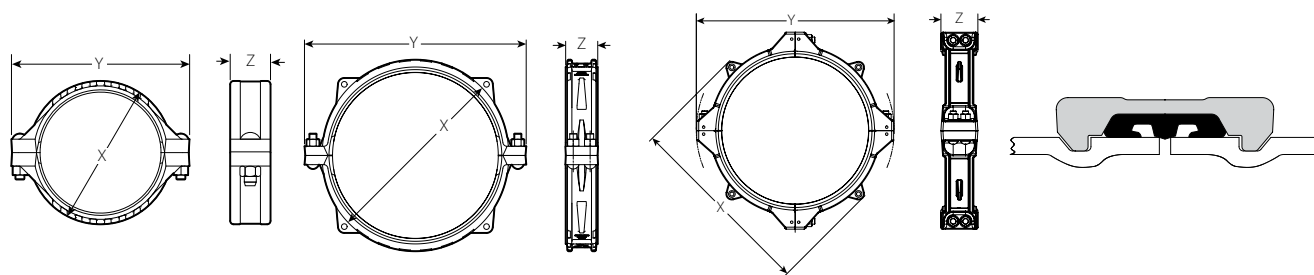
Condition CW Nuts- Stainless steel meeting the mechanical property requirements of ASTM A194 Grade 8M (316 Stainless steel) heavy hex. Condition CW with galling reducing coating.

For 26 – 72"/DN650 – DN1800 sizes:

Washers: Plated carbon steel, flat. SAE high strength conforming to ASTM F-436 or high strength stainless steel.

² Optional bolts/nuts are available in imperial size only.

4.0 DIMENSIONS



Typical 14 – 24"/350 – 600 mm Typical 26 – 60"/650 – 1500 mm Typical 62 & 72"/1550 & 1800 mm

Exaggerated for clarity

Size*		Maximum Working Pressure			Max. End Load ³	Pipe End Separation	Deflect. From CL		Qty.	Bolt/Nut	Dimensions			Weight
Nominal	Actual Outside Diameter	Light Wall ⁴	Std. Wall	Extra Heavy		Allowable	Per Cplg. Deg.	in/ft mm/m			X	Y	Z	Approx. (Each)
inches DN	inches mm	psi kPa	psi kPa	1/2 – 3/4" 13–19mm	lb kg	inches mm				Size inches mm	inches mm	inches mm	inches mm	lb kg
14	14.000	350	350	350	55800	0.13 – 0.31	0.73	0.15	2	1 x 5 1/2	16.00	20.63	4.50	48.0
350	355.6	2400	2400	2400	248310	3.3 – 7.9		13			406	524	114	21.8
16	16.000	350	350	350	72885	0.13 – 0.31	0.63	0.13	2	1 x 5 1/2	18.25	22.00	4.50	58.0
400	406.4	2400	2400	2400	324338	3.3 – 7.9		11			464	559	114	26.3
18	18.000	350	350	350	92245	0.13 – 0.31	0.57	0.12	2	1 x 5 1/2	20.38	25.50	4.50	65.0
450	457.0	2400	2400	2400	410490	3.3 – 7.9		10			518	648	114	29.5
20	20.000	350	350	350	113880	0.13 – 0.31	0.50	0.10	2	1 1/8 x 5 1/2	22.63	27.13	4.50	82.0
500	508.0	2400	2400	2400	506766	3.3 – 7.9		9			575	689	114	37.2
22	22.000	350	350	350	133046	0.13 – 0.31	0.50	0.10	2	1 1/8 x 6	24.75	29.25	4.50	99.0
550	559.0	2400	2400	2400	592075	3.3 – 7.9		9			629	743	114	44.9
24	24.000	225	350	350	163990 ⁵	0.13 – 0.31	0.42	0.09	2	1 1/8 x 5 1/2	26.88	31.25	4.50	107.0
600	610.0	1600	2400	2400	729756 ⁵	3.3 – 7.9		8			683	794	114	48.5
26	26.000	300	300	300	159279	0.15 – 0.53	0.83	0.18	4	1 1/8 x 6	30.13	35.25	5.75	205.0
650	660.4	2065	2065	2065	708508	3.8 – 13.5		15			765	895	146	93.0
28	28.000	300	300	300	184726	0.15 – 0.53	0.78	0.16	4	1 1/8 x 6	32.25	37.25	5.75	220.0
700	711.2	2065	2065	2065	821702	3.8 – 13.5		14			819	946	146	99.8
30	30.000	300	300	300	212058	0.15 – 0.53	0.73	0.16	4	1 1/4 x 7	33.88	39.63	5.75	227.0
750	762.0	2065	2065	2065	943281	3.8 – 13.5		13			863	1007	146	103.0
32	32.000	300	300	300	241274	0.15 – 0.53	0.68	0.14	4	1 1/4 x 7	36.13	41.75	5.75	242.0
800	812.8	2065	2065	2065	1073240	3.8 – 13.5		11			918	1060	146	109.8
34	34.000	300	300	300	272375	0.15 – 0.53	0.69	0.13	4	1 1/4 x 7	38.25	43.75	5.75	255.0
850	865.0	2065	2065	2065	121207	3.8 – 13.5		11			972	1111	146	115.7
36	36.000	300	300	300	305363	0.15 – 0.53	0.60	0.13	4	1 1/4 x 7	40.25	45.75	5.75	268.0
900	914.4	2065	2065	2065	1358322	3.8 – 13.5		11			1022	1161	146	121.6

³ End loads are total from all internal and external loads, based on carbon steel pipe, rolled with Victaulic AGS rolls in accordance with Victaulic AGS roll groove specifications 25.09. Contact Victaulic for performance on other pipe.

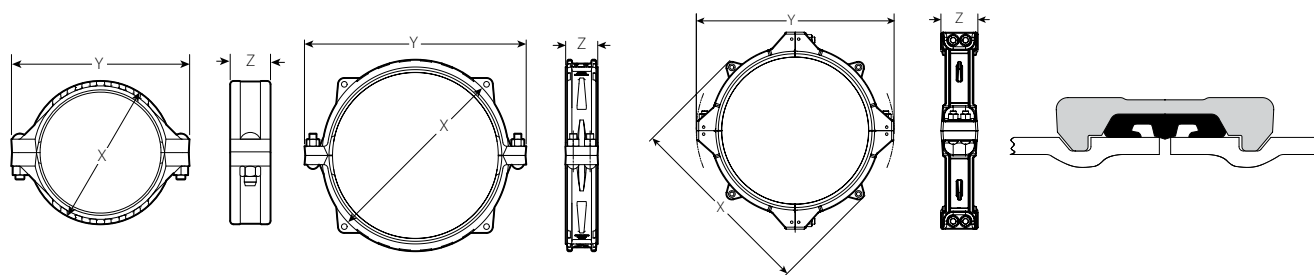
⁴ Light Wall for 14"/350 mm = 0.22"/5.6 mm; 16 – 24"/400 – 600 mm = 0.25"/6.4 mm, 26 – 50"/650 – 1250 mm = 0.312"/7.9 mm

⁵ The end load for 24"/600 mm installed on light wall pipe is 101790 Lbs/456426 N.

NOTES

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 1/2 times the figures shown.
- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- The outside diameter, ovality, and surface finish including flat spots and imperfections shall not vary more than the limits of API 5L end tolerance.
- Refer to [publication 25.09](#) for proper groove specifications.
- Additional wall thicknesses available. For performance on additional pipe wall thicknesses contact Victaulic.
- For additional pipe sizes, please contact Victaulic.

4.0 DIMENSIONS (Continued)



Typical 14 – 24"/350 – 600 mm

Typical 26 – 60"/650 – 1500 mm

Typical 62 & 72"/1550 & 1800 mm

Exaggerated for clarity

Size*		Maximum Working Pressure			Max. End Load ³ lb kg	Pipe End Separation		Deflect. From CL		Qty.	Bolt/Nut Size inches mm	Dimensions			Weight Approx. (Each) lb kg
Nominal inches DN	Actual Outside Diameter inches mm	Light Wall ⁴ psi kPa	Std. Wall psi kPa	Extra Heavy ½ – ¾" 13–19mm		Allowable inches mm	Per Cplg. Deg.	in/ft mm/m				X inches mm	Y inches mm	Z inches mm	
38 950	38.000 965.0	300 2065	300 2065	300 2065	340235 1513365	0.15 – 0.53 3.8 – 13.5	0.57	0.13 11		4	1 ¼ x 7	44.00 1117	50.50 1283	6.50 165	340.0 154.2
40 1000	40.000 1016.0	300 2065	300 2065	300 2065	376991 1676940	0.21 – 0.59 5.3 – 15.0	0.55	0.12 10		4	1 ½ x 8	44.00 1117	50.50 1283	6.50 165	340.0 154.2
42 1050	42.000 1066.8	300 2065	300 2065	300 2065	415632 1848823	0.21 – 0.59 5.3 – 15.0	0.52	0.11 9		4	1 ½ x 8	46.00 1168	52.50 1334	6.50 165	360.0 163.3
44 1100	44.000 1150.0	232 1600	232 1600	232 1600	352763 1581789	0.21 – 0.59 5.3 – 15.0	0.49	0.10 8		4	1 ½ x 8	50.25 1277	56.50 1435	6.50 165	390.0 176.9
46 1150	46.000 1168.4	232 1600	232 1600	232 1600	385561 1715746	0.21 – 0.59 5.3 – 15.0	0.47	0.10 8		4	1 ½ x 8	50.25 1277	56.50 1435	6.50 165	415.0 188.2
48 1200	48.000 1219.2	232 1600	232 1600	232 1600	419820 1868199	0.21 – 0.59 5.3 – 15.0	0.45	0.10 8		4	1 ½ x 8	52.25 1328	58.50 1486	6.50 165	425.0 192.8
50 1250	50.000 1270.0	232 1600	232 1600	232 1600	455530 2026298	0.21 – 0.59 5.3 – 15.0	0.43	0.09 8		4	1 ½ x 8	53.63 1362	60.88 1546	10.00 254	500.0 227.0
54 ⁶ 1350	54.000 1371.6	175 1200	175 1200	175 1200	400790 1782808	0.28 – 0.66 7.1 – 16.8	0.40	0.08 7		4	1 ½ x 7	59.00 1499	65.13 1655	10.00 254	648.0 293.9
56 ⁶ 1400	56.000 1422.2	175 1200	175 1200	175 1200	431030 1917317	0.28 – 0.66 7.1 – 16.8	0.38	0.08 7		4	1 ½ x 7	61.00 1550	67.63 1718	10.00 254	676.0 306.6
60 ⁶ 1500	60.000 1524.0	175 1200	175 1200	175 1200	494800 2201025	0.28 – 0.66 7.1 – 16.8	0.36	0.08 7		4	1 ½ x 7	65.00 1652	72.13 1832	10.00 254	720.0 326.6
62 ⁶ 1550	62.000 1574.8	–	175 1200	175 1200	528340 2350173	0.28 – 0.66 7.1 – 16.8	0.35	0.07 6		8	1 ½ x 7	67.25 1709	73.63 1870	10.00 254	956.0 433.6
64 ⁶ 1600	64.000 1625.6	–	175 1200	175 1200	528340 2350173	0.28 – 0.66 7.1 – 16.8	0.35	0.07 6		8	1 ½ x 7	69.58 1767	75.81 1926	10.00 254	956.0 433.6
72 ⁶ 1800	72.000 1828.8	–	125 850	125 850	509000 2264032	0.28 – 0.66 7.1 – 16.8	0.30	0.06 5		8	1 ½ x 7 ½	75.00 1905	85.00 2159	10.00 254	1140.0 518.0

³ End loads are total from all internal and external loads, based on carbon steel pipe, rolled with Victaulic AGS rolls in accordance with Victaulic AGS roll groove specifications 25.09. Contact Victaulic for performance on other pipe.

⁴ Light Wall for 14"/350mm = 0.22"/5.6mm; 16 – 24"/400 – 600mm = 0.25"/6.4mm; 26 – 50"/650 – 1250mm = 0.312"/7.9mm

⁵ The end load for 24"/600mm installed on light wall pipe is 101790Lbs/456426N.

⁶ Style W77N coupling.

NOTES

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.
- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- The outside diameter, ovality, and surface finish including flat spots and imperfections shall not vary more than the limits of API 5L end tolerance.
- Refer to [publication 25.09](#) for proper groove specifications.
- Additional wall thicknesses available. For performance on additional pipe wall thicknesses contact Victaulic.
- For additional pipe sizes, please contact Victaulic.

5.0 PERFORMANCE

Torque Requirements

Nominal Pipe Size inches DN	Required Torque ft. lbs. N•m
14, 16, 18 350, 400, 450	250 340
20, 22, 24, 26, 28 500, 550, 600, 650, 700	375 500
30, 32, 34, 36, 38 750, 800, 850, 900, 950	500 680
40, 42, 44, 46, 48, 50, 54, 56, 58, 60, 62, 64, 72 1000, 1050, 1100, 1150, 1200, 1250, 1350, 1450, 1500, 1550, 1600, 1800	600 813

6.0 NOTIFICATIONS

WARNING

- When grooving pipe for use with AGS products, Victaulic roll grooving tools must be quipped with AGS roll sets (RW for steel or RWX for stainless steel).
- RWX grooving rolls are identified by a silver color and the designation "RWX" on the front of the roll sets.
- Victaulic AGS products **MUST NOT** be installed on pipe that is prepared with original-type grooving roll sets.
- To ensure proper pipe end preparation refer to [publication 25.09](#) for AGS (Advanced Groove System) roll groove pipe specifications.

Failure to follow these instructions will cause grooves that are not within Victaulic AGS specifications, resulting in joint failure, serious personal injury, and property damage.

7.0 REFERENCE MATERIALS

[02.06: Potable Water Approvals](#)

[05.01: Seal Selection Guide](#)

[10.01: Regulatory Approval Reference Guide](#)

[16.12 AGS Vic-Ring® Systems](#)

[17.01: Pipe Preparation for Use on Stainless Steel Pipe With Victaulic Products](#)

[17.09: Victaulic Grooved Couplings Performance Data on Stainless Steel Pipe](#)

[20.05: AGS Fittings](#)

[24.01: Tools](#)

[25.09: AGS Roll Groove Data](#)

[26.01: Design Data](#)

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

[I-100: Field Installation Handbook](#)

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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