

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

Approvals/Listings:



Product Description:

The patented Style W77 AGS (Advanced Groove System) coupling is comprised of two housings for 14 – 60"/ 350 – 1500 mm and four housings for 62 – 72"/ 1550 – 1800 mm. The Style W77 is designed to provide a strong connection for large diameter pressure piping systems. Its unique wedge-shaped key profile increases allowable pipe end separation, resulting in easier initial assembly alignment. The Style W77 AGS coupling in 26 – 72"/650 – 1800 mm sizes, features lifting lugs integrated into the housings to help ease handling during installation.

Style W77 AGS couplings are rated up to 350 psi/2400 kPa for 14 – 24"/350 – 600 mm piping systems, up to 300 psi/2065 kPa for 26 – 42"/650 – 950 mm piping systems, to 232 psi/1600 kPa for 44 – 50"/1100 – 1250 mm piping systems to 175 psi/1200 kPa for 54 – 62"/1350 – 1550 mm and 125 psi/ 875 kPa for 72"/1800 mm piping systems (depending on wall thickness) utilizing API 5L pipe ends. Style W77 AGS couplings 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, and other applications requiring flexibility. Support and hanging requirements are defined within Victaulic Design Data Submittal 26.01.

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](#).

Job/Owner

System No.	
Location	

Contractor

Submitted By	
Date	

Engineer

Spec Section	
Paragraph	
Approved	
Date	

Material Specifications:

Housing:

Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

Standard: Orange enamel

Optional: Hot dipped galvanized and others

Coupling Gasket: (specify choice¹)

Grade "E" FlushSeal EPDM

EPDM (Green color code). Temperature range -30°F to +230°F/ -34°C to +110°C. Recommended 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 +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

Grade "T" nitrile

Nitrile (Orange color code). Temperature range -20°F to +180°F/-29°C to +82°C. Recommended 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. Recommended for dry heat, air without hydrocarbons to +350°F/+177°C and certain chemical services.

¹ Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

Bolts:

Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.

Nuts:

Plated carbon steel, heavy hex conforming to ASTM A-563, Grade B.

For 26 – 72"/650 – 1800 mm Sizes

Washers:

Plated carbon steel, flat, SAE high strength conforming to ASTM F-436.

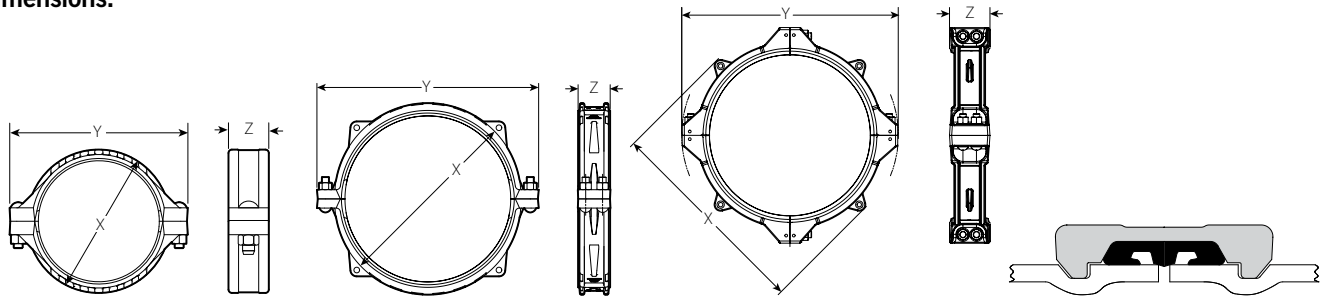


WARNING

- **When grooving pipe for use with AGS products, Victaulic roll grooving tools must be equipped 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.**

When preparing pipe for AGS products, please contact Victaulic for groove specifications for AGS groove dimensions.

Dimensions:



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

Exaggerated for clarity

Nominal Size	Actual Outside Diameter	Maximum Working Pressure ²			Max. End Load ²	Allow. Pipe End Sep. ⁶	Deflect. From CL ⁶		Bolt/Nut	Dimensions			Approx. Weight Each
		Light Wall ⁴	Std. Wall	Extra Heavy ½–¾"/ 13–19 mm			Per Cplg. Deg.	inches		X	Y	Z	
inches mm	inches mm	psi kPa	psi kPa		Lbs. N	inches mm		(No.) size inches	inches mm	inches mm	inches mm	lbs. kg	
14 ³ 350	14.000 355.6	350 2400	350 2400	350 2400	55800 248310	0.13-0.31 3.3-7.9	0.73	0.15 13	2 – 1 × 5½	16.00 406	20.63 524	4.50 114	48.0 21.8
16 400	16.000 406.4	350 2400	350 2400	350 2400	72885 324338	0.13-0.31 3.3-7.9	0.63	0.13 11	2 – 1 × 5½	18.25 464	22.00 559	4.50 114	58.0 26.3
18 450	18.000 457.0	350 2400	350 2400	350 2400	92245 410490	0.13-0.31 3.3-7.9	0.57	0.12 10	2 – 1 × 5½	20.38 518	25.50 648	4.50 114	65.0 29.5
20 500	20.000 508.0	350 2400	350 2400	350 2400	113880 506766	0.13-0.31 3.3-7.9	0.50	0.10 9	2 – 1½ × 5½	22.63 575	27.13 689	4.50 114	82.0 37.2
22 550	22.000 559.0	350 2400	350 2400	350 2400	133046 592075	0.13-0.31 3.3-7.9	0.50	0.10 9	2 – 1½ × 6	24.75 629	29.25 743	4.50 114	99.0 44.9
24 600	24.000 610.0	225 1600	350 2400	350 2400	163990 ⁵ 729756 ⁵	0.13-0.31 3.3-7.9	0.42	0.09 8	2 – 1½ × 5½	26.88 683	31.25 794	4.50 114	107.0 48.5
26 650	26.000 660.4	300 2065	300 2065	300 2065	159279 708508	0.15-0.53 3.8-13.5	0.83	0.18 15	4 – 1½ × 6	30.13 765	35.25 895	5.75 146	205.0 93.0
28 700	28.000 711.2	300 2065	300 2065	300 2065	184726 821702	0.15-0.53 3.8-13.5	0.78	0.16 14	4 – 1½ × 6	32.25 819	37.25 946	5.75 146	220.0 99.8
30 750	30.000 762.0	300 2065	300 2065	300 2065	212058 943281	0.15-0.53 3.8-13.5	0.73	0.16 13	4 – 1¼ × 7	33.88 863	39.63 1007	5.75 146	227.0 103.0
32 800	32.000 812.8	300 2065	300 2065	300 2065	241274 1073240	0.15-0.53 3.8-13.5	0.68	0.14 11	4 – 1¼ × 7	36.13 918	41.75 1060	5.75 146	242.0 109.8

2 Working Pressure and End Load are total, from all internal and external loads, based on minimum nominal wall thicknesses shown within AGS Roll Groove Specifications 25.09, AGS roll grooved in accordance with Victaulic® specifications. Contact Victaulic for performance on other pipe.

WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

3 The 14*/350 mm size Style W77 AGS coupling is FM approved for a maximum working pressure of 350 psi/2415kPa on cut grooved Sch 30 pipe and roll grooved 0.188"/5 mm wall 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.

6 Allowable Pipe End Separation and Deflection figures show the maximum nominal range of movement available at each joint for AGS roll grooved pipe. These figures are maximums; for design and installation purposes these figures should be reduced by 25%.

Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.

NOTE: Style W77 AGS couplings must not be used to join PVC pipe.

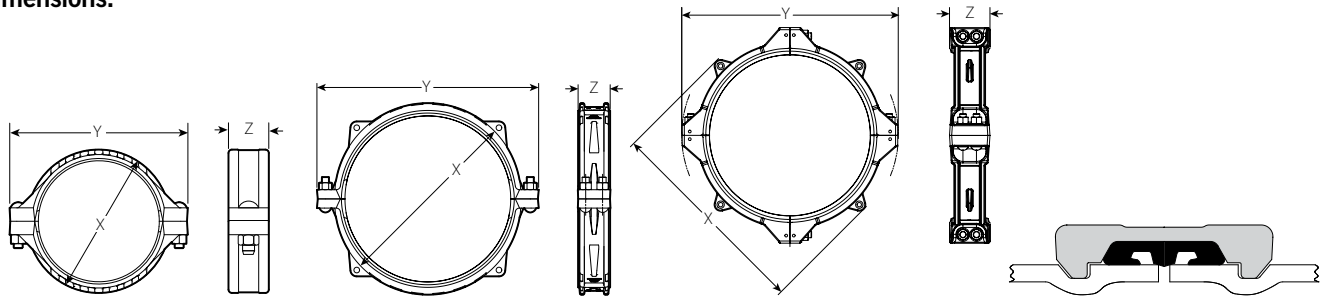
NOTE: The Style W77 coupling in 14 – 72*/350 – 1800 mm sizes cannot be used on roll grooved pipe with wall thicknesses greater than 0.750"/19.4 mm. Systems requiring heavier wall pipe must be cut grooved.

NOTE: The outside diameter of roll grooved pipe shall not vary more than the limits of API 5L end tolerance. The maximum allowable tolerance from squarecut ends is 0.125"/3.18 mm measured from a true square line.

NOTE: For sizes 26*/650 mm through 72*/1800 mm refer to publication 25.09 for proper groove specifications.

NOTE: Style W77 couplings in sizes from 14 – 24*/350 – 600 mm can be installed on thin wall/Schedule 10S stainless steel piping systems with pressures not exceeding 150 psi/1035 kPa.

Dimensions:



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

Exaggerated for clarity

Nominal Size	Actual Outside Diameter	Maximum Working Pressure ²			Max. End Load ²	Allow. Pipe End Sep. ⁶	Deflect. From CL ⁶		Bolt/Nut	Dimensions			Approx. Weight Each
		Light Wall ⁴	Std. Wall	Extra Heavy ^{1/2-3/4"/13-19 mm}			Per Cplg. Deg.	inches		X	Y	Z	
inches mm	inches mm	psi kPa	psi kPa	psi kPa	Lbs. N	inches mm		(No.) size inches	inches mm	inches mm	inches mm	lbs. kg	
34 850	34.000 865.0	300 2065	300 2065	300 2065	272375 121207	0.15 - 0.53 3.8 - 13.5	0.69	0.13 11	4 - 1 1/4 x 7	38.25 972	43.75 1111	5.75 146	255.0 115.7
36 900	36.000 914.4	300 2065	300 2065	300 2065	305363 1358322	0.15-0.53 3.8 - 13.5	0.60	0.13 11	4 - 1 1/4 x 7	40.25 1022	45.75 1161	5.75 146	268.0 121.6
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 1/4 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 1/2 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 1/2 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 1/2 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 1/2 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 1/2 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 1/2 x 8	53.63 1362	60.88 1546	10.00 254	500.0 227.0
54 ⁷ 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 1/2 x 7	59.00 1499	65.13 1655	10.00 254	648.0 293.9
56 ⁷ 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 1/2 x 7	61.00 1550	67.63 1718	10.00 254	676.0 306.6
60 ⁷ 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 1/2 x 7	65.00 1652	72.13 1832	10.00 254	720.0 326.6
62 ⁷ 1550	62.000 1574.8	-	175 1200	175 1200	528340 2350173	0.28-0.66 7.1 - 16.8	0.35	0.07 6	4 - 1 1/2 x 7	67.25 1709	73.63 1870	10.00 254	956.0 433.6
72 ⁷ 1800	72.000 1828.8	-	125 850	125 850	509000 2264032	0.28-0.66 7.1 - 16.8	0.30	0.06 5	4 - 1 1/2 x 7 1/2	75.00 1905	85.00 2159	10.00 254	1140.0 518.0

² Working Pressure and End Load are total, from all internal and external loads, based on minimum nominal wall thicknesses shown within AGS Roll Groove Specifications 25.09, AGS roll grooved in accordance with Victaulic® specifications. Contact Victaulic for performance on other pipe.

WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 1/2 times the figures shown.

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.

⁶ Allowable Pipe End Separation and Deflection figures show the maximum nominal range of movement available at each joint for AGS roll grooved pipe. These figures are maximums; for design and installation purposes these figures should be reduced by 25%.

⁷ Style W77N coupling

Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.

NOTE: Style W77 AGS couplings must not be used to join PVC pipe.

NOTE: The Style W77 coupling in 14 - 72"/350 - 1800 mm sizes cannot be used on roll grooved pipe with wall thicknesses greater than 0.750"/19.4 mm. Systems requiring heavier wall pipe must be cut grooved.

NOTE: The outside diameter of roll grooved pipe shall not vary more than the limits of API 5L end tolerance. The maximum allowable tolerance from squarecut ends is 0.125"/3.18 mm measured from a true square line.

NOTE: For sizes 26"/650 mm through 72"/1800 mm refer to publication 25.09 for proper groove specifications.

NOTE: Style W77 couplings in sizes from 14 - 24"/350 - 600 mm can be installed on thin wall/Schedule 10S stainless steel piping systems with pressures not exceeding 150 psi/1035 kPa.

Torque Requirements:

Nominal Size inches mm	Recommended Toque 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, 60, 62, 72 1000, 1050, 1100, 1150, 1200, 1250, 1350, 1450, 1500, 1550, 1800	600 813

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.

Warranty

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

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.

Trademarks

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