I-W100

FIELD INSTALLATION HANDBOOK
Advanced Groove System AGS™ Products

Revision D 09/2022

⚠ WARNING

- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

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

Contact Victaulic with any questions regarding safe and proper installation of products featured in this handbook.
Visit victaulic.com for the most up-to-date information on Victaulic products.

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INTRODUCTION

This I-W100 Field Installation Handbook contains important information regarding pipe preparation and installation of 14-inch/DN350 and larger Victaulic® Advanced Groove System (AGS) mechanical piping products.

Always follow good piping practices and local building codes and requirements. Specified pressures, temperatures, external loads, internal loads, performance standards, and tolerances shall never be exceeded.

Qualified engineers shall reference Victaulic Section 26 publications and publication 05.01 for additional information regarding special conditions, code requirements, and the use of safety factors. These publications can be downloaded at victaulic.com.

Products featured in this handbook are designed for use only with pipe that is specified by a system designer/engineer or contractor and then prepared to Victaulic specifications.

Victaulic grooved pipe couplings are designed for use only with pipe that is grooved to Victaulic specifications. In addition, Victaulic grooved pipe couplings are for use only with Victaulic grooved-end fittings, valves, and related grooved-end components. Victaulic grooved pipe couplings are not intended for use with plain-end pipe and/or fittings.

Victaulic gaskets are designed to perform in a wide range of temperatures and operating conditions. As with all installations, there is a direct relationship between temperature, continuity of service, and gasket life. Always reference Victaulic publication 05.01 to determine gasket material grades that may be specified for each application.

In addition to this I-W100, Victaulic offers field installation handbooks, installation sheets, or installation tags for mechanical piping products that join alternate piping materials or other dedicated groove profile technologies. These instructions are shipped with the applicable product and can be downloaded at victaulic.com.

SCAN QR CODE FOR ADDITIONAL FIELD INSTALLATION HANDBOOKS THAT VICTAULIC OFFERS

ADDITIONAL COPIES OF FIELD INSTALLATION HANDBOOKS ARE AVAILABLE FROM YOUR LOCAL VICTAULIC SALES REPRESENTATIVE

NOTICE

- **Victaulic maintains a policy of continuous product improvement. Therefore, Victaulic reserves the right to change product specifications, designs, and standard equipment without notice and without incurring obligation.**
- **VICTAULIC IS NOT RESPONSIBLE FOR SYSTEM DESIGN, NOR DOES THE COMPANY ASSUME ANY RESPONSIBILITY FOR SYSTEMS THAT ARE DESIGNED IMPROPERLY.**
- **This handbook is not intended to be a substitute for competent, professional engineering/piping system design and installation, which are prerequisites for any product application.**
- **This handbook is intended for use only by professional piping system designers, engineers, and installers.**
- **The information published in this handbook and other Victaulic literature supersedes all previously published information.**
- **Drawings and/or pictures in this manual may be exaggerated for clarity.**
- **The field installation handbook contains trademarks, copyrights, and products with patented features that are the exclusive property of Victaulic.**
- **WHILE EVERY EFFORT HAS BEEN MADE TO ENSURE ITS ACCURACY, VICTAULIC, ITS SUBSIDIARIES, AND ITS AFFILIATED COMPANIES MAKE NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND REGARDING THE INFORMATION CONTAINED OR REFERENCED IN THIS HANDBOOK. ANYONE WHO USES THE INFORMATION CONTAINED HEREIN DOES SO AT THEIR RISK AND ASSUMES ANY LIABILITY THAT RESULTS FROM SUCH USE.**

California Customers – Proposition 65 Compliance:

WARNING: The painted surface of these products can expose you to chemicals, including BBP, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

WARNING: Grades V and M2 can expose you to trace amounts of chemicals, such as ethylene thiourea, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

WARNING: Brass components, even those manufactured from "low lead" or "no lead" brass, can expose you to trace amounts of chemicals, such as lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

Canadian Customers – CSA B51 Compliance:

For applications within the scope of CSA B51, "Boiler, Pressure Vessel and Pressure Piping Code," please contact Victaulic for the most up-to-date Canadian Registration Numbers, approved products, and temperature ratings.

Hazard Identification

Definitions for identifying the various hazard levels are provided below.

This safety alert symbol indicates important safety messages. When you see this symbol throughout this handbook, be alert to the possibility of personal injury. Carefully read and fully understand the message that follows.

DANGER

- **The use of the word "DANGER" identifies an immediate hazard with a likelihood of death or serious personal injury if instructions, including recommended precautions, are not followed.**

WARNING

- **The use of the word "WARNING" identifies the presence of hazards or unsafe practices that could result in death or serious personal injury if instructions, including recommended precautions, are not followed.**

CAUTION

- **The use of the word "CAUTION" identifies possible hazards or unsafe practices that could result in personal injury and product or property damage if instructions, including recommended precautions, are not followed.**

NOTICE

- **The use of the word "NOTICE" identifies special instructions that are important but not related to hazards.**

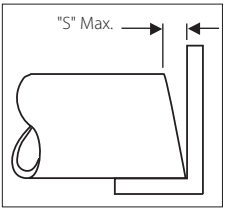
Pipe Preparation and Grooving Specifications

Victaulic®

I-W100_1

PIPE END INSPECTION AND PREPARATION – AGS™ DIRECT-GROOVING APPLICATIONS

Pipe ends shall be prepared and visually inspected in accordance with the requirements listed in this section.



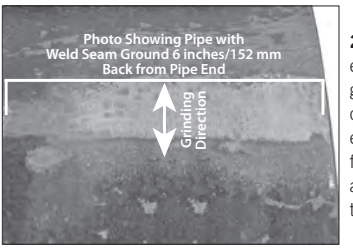
1. The maximum allowable tolerance from square-cut pipe ends ("S" dimension shown) is:

1/16 inch/1.6 mm for 14 – 20-inch/DN350 – DN500 – sizes

3/32 inch/2.4 mm for 22-inch/DN550 and larger sizes

This is measured from the true square line.

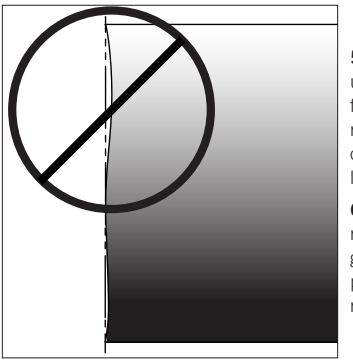
For 14 – 50-inch/DN350 – DN1250 sizes, beveled-end pipe may be used, provided that the wall thickness is 0.375 inch/9.5 mm or less and that the bevel meets ASTM A53 and/or API 5L (30° +5°/-0°). **NOTE: Roll grooving beveled-end pipe may result in unacceptable flare.**



2. Prior to grooving, raised internal and external weld beads and seams shall be ground flush to the pipe surface a minimum of 6 inches/152 mm back from the pipe end. This area shall be generally free from indentations, projections, weld seam anomalies, and roll marks to ensure a leak-tight seal.

3. Pipe with external axial weld seams can be supported with Victaulic Adjustable Pipe Stands; however, the weld seam shall be smooth and rounded and at least three times as wide as it is high. External axial weld seams shall not exceed 1/8 inch/3.2 mm in height.

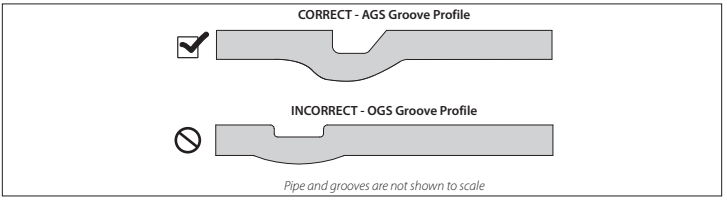
4. The inside diameter of the pipe end shall be cleaned to remove coarse scale, dirt, and other foreign material that might interfere with or damage grooving rolls.



5. The front edge of the pipe end shall be uniform, with no concave/convex surface features that will cause improper grooving roll tracking and result in difficulties during coupling assembly. Refer to the drawing to the left for an unacceptable pipe end.

6. If pipe cut-off is required, Victaulic recommends the use of a mechanically-guided pipe cutting tool for proper pipe end preparation. Free-hand pipe end cutting is not recommended.

7. Always refer to the operating and maintenance manual for the pipe preparation tool and the specific installation instructions associated with the product for which you are preparing pipe. **For stainless steel pipe prepraration requirements, always refer to Victaulic publication 17.01, which can be downloaded at victaulic.com.**



8. Groove the pipe in accordance with the AGS grooving specifications listed on the following pages. **When direct-grooving pipe for use with Style W07/LW07, W77, W77B, and W89 AGS Couplings or Style W741 AGS Vic-Flange Adapters, Victaulic AGS roll sets are required. DO NOT attempt to assemble AGS Couplings on pipe that is direct grooved with Original Groove System (OGS) roll sets.**

9. Clean the outside surface of the pipe, from the groove to the pipe end, to remove all oil, grease, loose paint, and dirt.

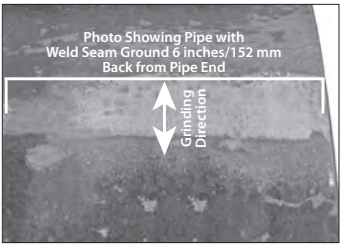
PIPE END INSPECTION AND PREPARATION – AGS *VIC-RING* APPLICATIONS

For *Vic-Ring* applications, Type "B" or Type "D" AGS *Vic-Rings* are required for use with Style W07, W77, W77B, and W89 AGS Couplings. Pipe ends and *Vic-Rings* shall be prepared and visually inspected in accordance with the requirements listed in this section.

⚠ WARNING

- **It is the welder's responsibility to verify that AGS *Vic-Rings* are welded correctly to the pipe, in accordance with project/site-specific welding standards and in conformance with the AGS *Vic-Ring* Weldment submittal drawing(s) provided for the specific project.**
- **The weld shall be capable of withstanding all thrust loads, in accordance with appropriate American Welding Society (AWS) specifications or other local or national codes and requirements. All welds shall be leak-tight.**
- **Applicable safety procedures shall be followed during the welding process.**

Failure to follow these instructions could cause improper product installation, resulting in death or serious personal injury and property damage.



1. Prior to welding a *Vic-Ring* onto the pipe end, weld seams shall be ground flush to the pipe surface (outside diameter). Grind the weld seam from the pipe end to a minimum distance of 6 inches/152 mm back from the pipe end. This area shall be generally free from indentations, projections, and roll marks.

2. Weld the *Vic-Ring* onto the pipe end per the literature provided with the shipment and the specifications listed in Victaulic publication 16.11 for Style W07 Rigid Couplings, 16.12 for Style W77/W77B Flexible Couplings, or 16.15 for Style W89 Rigid Couplings.

3. Clean the outside surface of the *Vic-Rings* to remove dirt and other foreign material.

TOOL RATINGS

⚠ WARNING

- **Before setting up and operating any Victaulic pipe preparation tools, read and understand the operating and maintenance manual that is shipped with the tool.**
- **Learn the operation requirements, applications, and potential hazards associated with the tool.**

Failure to follow these instructions could cause improper product installation, resulting in death or serious personal injury and property damage.

NOTICE

- **AGS roll sets for use on both light-weight and standard-weight carbon steel pipe, as well as standard-weight stainless steel pipe, are distinguished by a black appearance with a yellow band.**
- **AGS roll sets for less than standard-weight stainless steel pipe are distinguished by a silver appearance with a black band.**
- **AGS roll sets SHALL NOT be mixed with roll sets for other groove profiles.**

Victaulic offers pipe preparation tools that are designed for field use or shop fabrication. For detailed information on pipe preparation tool ratings and capacities, refer to Victaulic publication 24.01, which can be downloaded at victaulic.com. For information about maintenance and operation of pipe preparation tools, refer to the applicable operating and maintenance manual that is shipped with the tool and that can be downloaded at victaulic.com.

PIPE LENGTHS SUITABLE FOR GROOVING

The table below identifies the minimum pipe lengths that can be grooved safely by using Victaulic Grooving Tools. In addition, this table identifies the maximum pipe lengths that can be grooved without the use of a pipe stand. Pipe that exceeds the maximum lengths listed in this table requires the use of a pipe stand. For additional tool and pipe stand setup requirements, always refer to the operating and maintenance manual that is shipped with the applicable tool. Tool operating and maintenance manuals and repair parts lists can be downloaded at victaulic.com.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Minimum Length that can be Grooved Safely with Victaulic Tool inches/mm	Maximum Length that can be Grooved Without Use of Pipe Stand inches/mm
14 – 16 DN350 – DN400	14.000 – 16.000 355.6 – 406.4	12 305	16 410
	14.843 – 16.772 377.0 – 426.0	12 305	16 410
18 and Larger DN450 and Larger	18.000 and Larger 457.2 and Larger	**NOTE: Always use a pipe stand when roll grooving pipe in these sizes. DO NOT roll groove pipe lengths shorter than 18 inches/457 mm in these sizes.**	
	18.898 and Larger 480.0 and Larger		

If pipe is required that is shorter than the minimum length listed in this table, shorten the next-to-last piece so that the last piece is as long (or longer) than the minimum length specified.

EXAMPLE: A 20-foot, 4-inch/6.2-m length of 14-inch/DN350 diameter carbon steel pipe is required to finish a section and only 20-foot/6.1-m lengths are available. Instead of roll grooving a 20-foot/6.1-m length of carbon steel pipe and a 4-inch/102-mm length of carbon steel pipe, follow these steps:

1. Refer to the table above, and note that for 14-inch/DN350 diameter carbon steel pipe, the minimum length that can be roll grooved is 12 inches/305 mm.

2. Roll groove a 19-foot, 4-inch/5.8-m length of pipe and a 12-inch/305-mm length of pipe.

EXPLANATION OF CRITICAL AGS ROLL GROOVE SPECIFICATIONS

⚠ WARNING

- **Pipe and groove dimensions shall be within the tolerances specified in the tables on the following pages to ensure proper joint performance.**

FOR ADVANCED GROOVE SYSTEM (AGS) COUPLINGS WITH RATINGS ON STAINLESS STEEL PIPE:

- **Victaulic AGS RW rolls SHALL be used when roll grooving Schedule 40S/ Standard-Weight Type 304/316 pipe for use with AGS couplings.**
- **Victaulic AGS RWX rolls SHALL be used when roll grooving Schedule 5S, Schedule 10S, and Schedule 10 Type 304/316 pipe for use with AGS couplings.**
- **For complete stainless steel pipe prepraration requirements, refer to Victaulic publication 17.01, which can be downloaded at victaulic.com.**

Failure to follow these specifications could cause joint failure, resulting in death or serious personal injury and property damage.

NOTICE

- **Depending on pipe material strength and hardness, AGS grooves produce pipe growth that typically is ⅛ inch (0.125 inch/3.2 mm) per AGS groove. This typical growth may vary and should be estimated based on the specific material conditions. For a pipe length with an AGS roll groove at each end, the pipe length will grow approximately ¼ inch (0.250 inch/6.4 mm) total. Therefore, the cut length should be adjusted to accommodate this growth. EXAMPLE: If you need a 24-inch/610-mm length of pipe that will contain an AGS roll groove at each end, cut the pipe to a length of approximately 23¾ inches/603 mm to allow for this growth.**

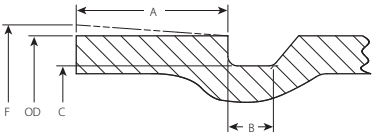


Illustration is exaggerated for clarity - Pipe and groove are not shown to scale

Pipe shall meet the physical and mechanical properties of ASTM A53, API 5L, AWWA C200, EN/BS10216-1, EN/BS10217-1, GB/T 3091, GB/T 8163, or other internationally recognized standards. Carbon steel pipe suitable for AGS roll grooving shall be Seamless, Electric-Welded (ERW), Longitudinal Seam Submerged-Arc Welded (SAW), Double Seam Submerged-Arc Welded (DSAW), or Helical Seam Submerged-Arc Welded (HSAW) construction.

Pipe Outside Diameter – Nominal NPS Pipe Size (ANSI B36.10) and Basic Metric Pipe Size (ISO 4200) – The average pipe outside diameter shall not vary from the specifications listed in the tables on the following pages. Maximum allowable pipe ovality shall not vary by more than 1%. Greater variations between the major and minor diameters will result in difficult coupling assembly.

"A" Dimension – The "A" dimension, or the distance from the pipe end to the groove, identifies the gasket seating area. This area between the groove and the pipe end shall be generally free from indentations, projections, weld seam anomalies, and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, rust, scale, dirt, and cutting particles shall be removed.

EXPLANATION OF CRITICAL AGS ROLL GROOVE SPECIFICATIONS (CONTINUED)

"B" Dimension – The "B" dimension, or groove width, controls expansion, contraction, and angular deflection of flexible couplings by the distance it is located from the pipe and its width in relation to the coupling housings' "key" width. The bottom of the groove shall be free from loose paint, rust, scale, dirt, and cutting particles that may interfere with proper coupling assembly. The Groove Width "B" dimension will be achieved with properly maintained Victaulic tools that are equipped with Victaulic AGS roll sets.

"C" Dimension – The "C" dimension is the average diameter at the base of the groove. This dimension shall be within the diameter's tolerance and concentric with the OD for proper coupling fit. The groove shall be of uniform depth for the entire pipe circumference.

"D" Dimension – The "D" dimension is the normal depth of the groove and is a reference for a "trial groove" only. Variations in pipe OD affect this dimension and shall be altered, if necessary, to keep the "C" dimension within tolerance. The groove diameter shall conform to the "C" dimension described above.

"F" Dimension (Roll Groove Only) – Maximum allowable pipe-end flare diameter is measured at the extreme pipe-end diameter. **NOTE:** This applies to average (pi tape) and single-point readings.

Nominal Wall Thickness – This is the nominal allowable pipe wall thickness that is suitable for roll grooving. Pipe that is less than the nominal wall thickness may be adapted for Victaulic AGS couplings by using AGS *Vic-Ring* Adapters. AGS *Vic-Ring* Adapters can be used in the following situations (contact Victaulic for details):

- When pipe is less than the nominal allowable pipe wall thickness that is suitable for roll grooving
- When pipe outside diameter is too large to roll groove
- When pipe is used in abrasive services

For pipe defects not listed in this section, reference API-5L tolerance for pipe ends. For values listed as "by agreement," use the values listed for the next smaller family or D/T ratio.

NOTICE

Coatings that are applied to the interior surfaces of Victaulic AGS Couplings listed in this handbook shall not exceed 0.010 inch/0.25 mm. This includes the bolt pad mating surfaces.

The coating thickness applied to the gasket sealing surface and within the AGS groove on the pipe exterior or AGS *Vic-Ring* exterior shall not exceed 0.010 inch/0.25 mm. This pipe coating thickness will affect the roll groove specifications listed on the following pages. Allowances shall be made for the following:

- **Pipe Outside Diameter, Gasket Seat "A", Groove Diameter "C", Minimum Allowable Wall Thickness "T", and Maximum Allowable Flare Diameter "F" will be INCREASED by 0.020 inch/0.50 mm.**
- **Groove Width "B" will be REDUCED by 0.020 inch/0.50 mm.**

AGS Roll Groove Specifications for Carbon Steel and Stainless Steel Pipe (In Accordance with EN 10217, ASTM A-53, ASTM A-312, or API 5L)

Nominal Size inches DN	inches/millimeters											
	Pipe Outside Diameter			Nominal Wall Thickness for Grooving		Gasket Seat "A"			Groove Width "B"	Groove Diameter "C"		Max. Allow. Flare Dia. "F"
	Actual	Max.	Min.	Carbon Steel	Stainless Steel (Less Than Standard Weight)	Basic	Max.	Min.		Max.	Min.	
14 DN350	14.000 355.6	14.093 358.0	13.969 354.8	0.220 - 0.750 5.6 - 19.1	0.188 4.8	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	13.500 342.9	13.455 341.8	14.23 361.4
	14.843 377.0	14.937 379.4	14.812 376.2	0.217 - 0.750 5.5 - 19.1	– –	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	14.343 364.3	14.298 363.2	15.07 382.8
16 DN400	16.000 406.4	16.093 408.8	15.969 405.6	0.250 - 0.750 6.4 - 19.1	0.188 4.8	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	15.500 393.7	15.455 392.6	16.23 412.2
	16.772 426.0	16.866 428.4	16.741 425.2	0.256 - 0.750 6.5 - 19.1	– –	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	16.272 413.3	16.227 412.2	17.00 431.8
18 DN450	18.000 457.2	18.093 459.6	17.969 456.4	0.250 - 0.750 6.4 - 19.1	0.188 4.8	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	17.500 444.5	17.455 443.4	18.23 463.0
	18.898 480.0	18.992 482.4	18.867 479.2	0.256 - 0.750 6.5 - 19.1	– –	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	18.398 467.3	18.353 466.2	19.13 485.9
20 DN500	20.000 508.0	20.093 510.4	19.969 507.2	0.250 - 0.750 6.4 - 19.1	0.218 5.5	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	19.500 495.3	19.455 494.2	20.23 513.8
	20.866 530.0	20.960 532.4	20.835 529.2	0.256 - 0.750 6.5 - 19.1	– –	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	20.366 517.3	20.321 516.2	21.09 535.7
22 DN550	22.000 558.8	22.093 561.2	21.969 558.0	0.250 - 0.750 6.4 - 19.1	0.218 5.5	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	21.500 546.1	21.455 545.0	22.23 564.6
24 DN600	24.000 609.6	24.093 612.0	23.969 608.8	0.250 - 0.750 6.4 - 19.1	0.218 5.5	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	23.500 596.9	23.455 595.8	24.23 615.4

AGS Roll Groove Specifications for Carbon Steel and Stainless Steel Pipe (In Accordance with EN 10217, ASTM A-53, ASTM A-312, or API 5L)

Nominal Size inches DN	inches/millimeters											
	Pipe Outside Diameter			Nominal Wall Thickness for Grooving		Gasket Seat "A"			Groove Width "B"	Groove Diameter "C"		Max. Allow. Flare Dia. "F"
	Actual	Max.	Min.	Carbon Steel	Stainless Steel (Less Than Standard Weight)	Basic	Max.	Min.		Max.	Min.	
	24.803 630.0	24.897 632.4	24.772 629.2	0.256 - 0.750 6.5 - 19.1	– –	1.500 38.1	1.531 38.9	1.437 36.5	0.455 11.6	24.303 617.3	24.258 616.2	25.03 635.8
26 DN650	26.000 660.4	26.063 662.0	25.937 658.8	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	25.430 645.9	25.370 644.4	26.30 668.0
28 DN700	28.000 711.2	28.063 712.8	27.937 709.6	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	27.430 696.7	27.370 695.2	28.30 718.8
	28.346 720.0	28.409 721.6	28.283 718.4	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	27.776 705.5	27.716 704.0	28.65 727.6
30 DN750	30.000 762.0	30.063 763.6	29.937 760.4	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	29.430 747.5	29.370 746.0	30.30 769.6
32 DN800	32.000 812.8	32.063 814.4	31.937 811.2	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	31.430 798.3	31.370 796.8	32.30 820.4
	32.283 820.0	32.346 821.6	32.220 818.4	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	31.713 805.5	31.653 804.0	32.58 827.6
34 DN850	34.000 863.6	34.063 865.2	33.937 862.0	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	33.430 849.1	33.370 847.6	34.30 871.2
36 DN900	36.000 914.4	36.063 916.0	35.937 912.8	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	35.430 899.9	35.370 898.4	36.30 922.0
	36.220 920.0	36.283 921.6	36.157 918.4	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	35.650 905.5	35.590 904.0	36.52 927.6

AGS Roll Groove Specifications for Carbon Steel and Stainless Steel Pipe (In Accordance with EN 10217, ASTM A-53, ASTM A-312, or API 5L)

Nominal Size inches DN	inches/millimeters											
	Pipe Outside Diameter			Nominal Wall Thickness for Grooving		Gasket Seat "A"			Groove Width "B"	Groove Diameter "C"		Max. Allow. Flare Dia. "F"
	Actual	Max.	Min.	Carbon Steel	Stainless Steel (Less Than Standard Weight)	Basic	Max.	Min.		Max.	Min.	
38 DN950	38.000 965.2	38.063 966.8	37.937 963.6	0.313 - 0.750 8.0 - 19.1	– –	1.750 44.5	1.781 45.2	1.687 42.8	0.535 13.6	37.430 950.7	37.370 949.2	38.30 972.8
40 DN1000	40.000 1016.0	40.063 1017.6	39.937 1014.4	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	39.375 1000.1	39.315 998.6	40.30 1023.6
42 DN1050	42.000 1066.8	42.063 1068.4	41.937 1065.2	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	41.375 1050.9	41.315 1049.4	42.30 1074.4
44 DN1100	44.000 1117.6	44.063 1119.2	43.937 1116.0	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	43.375 1101.7	43.315 1100.2	44.30 1125.2
46 DN1150	46.000 1168.4	46.063 1170.0	45.937 1166.8	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	45.375 1152.5	45.315 1151.0	46.30 1176.0
48 DN1200	48.000 1219.2	48.063 1220.8	47.937 1217.6	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	47.375 1203.3	47.315 1201.8	48.30 1226.8
50 DN1250	50.000 1270.0	50.063 1271.6	49.937 1268.4	0.313 - 0.750 8.0 - 19.1	– –	2.000 50.8	2.031 51.6	1.937 49.2	0.562 14.3	49.375 1254.1	49.315 1252.6	50.30 1277.6
52 DN1300	52.000 1320.8	52.063 1322.4	51.937 1319.2	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	51.430 1306.3	51.370 1304.8	52.30 1328.4
54 DN1350	54.000 1371.6	54.063 1373.2	53.937 1370.0	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	53.430 1357.1	53.370 1355.6	54.30 1379.2
56 DN1400	56.000 1422.4	56.063 1424.0	55.937 1420.8	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	55.430 1407.9	55.370 1406.4	56.30 1430.0

AGS Roll Groove Specifications for Carbon Steel and Stainless Steel Pipe (In Accordance with EN 10217, ASTM A-53, ASTM A-312, or API 5L)

Nominal Size inches DN	inches/millimeters											
	Pipe Outside Diameter			Nominal Wall Thickness for Grooving		Gasket Seat "A"			Groove Width "B"	Groove Diameter "C"		Max. Allow. Flare Dia. "F"
	Actual	Max.	Min.	Carbon Steel	Stainless Steel (Less Than Standard Weight)	Basic	Max.	Min.		Max.	Min.	
58 DN1450	58.000 1473.2	58.063 1474.8	57.937 1471.6	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	57.430 1458.7	57.370 1457.2	58.30 1480.8
60 DN1500	60.000 1524.0	60.063 1525.6	59.937 1522.4	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	59.430 1509.5	59.370 1508.0	60.30 1531.6
62 DN1550	62.000 1574.8	62.063 1576.4	61.937 1573.2	0.375 - 0.750 9.5 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	61.430 1560.3	61.370 1558.8	62.30 1582.4
64 DN1600	64.000 1625.6	64.063 1627.2	63.937 1624.0	0.500 - 0.750 12.7 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	63.430 1611.1	63.370 1609.6	64.30 1633.2
66 DN1650	66.000 1676.4	66.063 1678.0	65.937 1674.8	0.500 - 0.750 12.7 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	65.430 1661.9	65.370 1660.4	66.30 1684.0
68 DN1700	68.000 1727.2	68.063 1728.8	67.937 1725.6	0.500 - 0.750 12.7 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	67.430 1712.7	67.370 1711.2	68.30 1734.8
70 DN1750	70.000 1778.0	70.063 1779.6	69.937 1776.4	0.500 - 0.750 12.7 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	69.430 1763.5	69.370 1762.0	70.30 1785.6
72 DN1800	72.000 1828.8	72.063 1830.4	71.937 1827.2	0.500 - 0.750 12.7 - 19.1	– –	2.500 63.5	2.531 64.3	2.437 61.9	0.562 14.3	71.430 1814.3	71.370 1812.8	72.30 1836.4

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Important Gasket and Lubricant Information

GASKET SELECTION

⚠ CAUTION

- **To ensure gasket performance, always specify the material grade that is suitable for the intended service.**
- **Always reference the specific product's installation instructions for details regarding when to apply lubrication to individual components.**
- **Always use a lubricant that is compatible with the gasket material grade, as outlined in the specific product instructions.**

Failure to follow these instructions may result in joint leakage and property damage.

During selection and verification of gasket material grades, reference shall be made to Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com. For rubber-lined valves or other rubber-lined products, reference the applicable Victaulic publication for specific requirements.

Do not subject gaskets to temperatures beyond the specified limits. Excessive temperatures will degrade gasket performance.

Gasket Color Code Reference

Grade	Compound	Color Code
E	EPDM	Green Stripe
T	Nitrile	Orange Stripe
L	Silicone	Red Gasket
O	Fluoroelastomer	Blue Stripe

STORAGE OF GASKETS

Until the time of installation, Victaulic products with exposed elastomeric components shall be stored in typical warehouse conditions, where components are protected from outside environmental factors such as: sun exposure, ozone exposure, extreme temperatures, and extreme relative humidity (or as specified by national and local codes and standards for the jobsite).

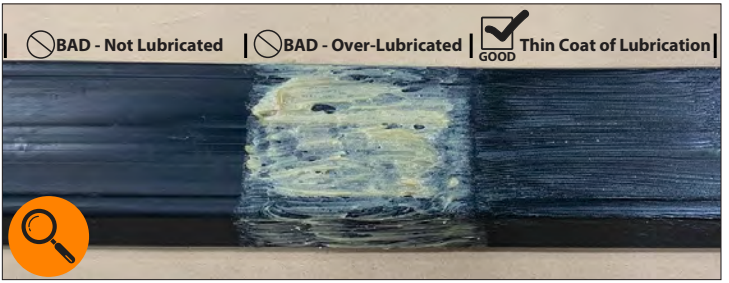
LUBRICANT REQUIREMENTS

Refer to the specific product's instructions for details regarding when to apply lubrication to individual components. Lubrication helps ease installation of the gasket onto prepared pipe ends, and it helps prevent gasket pinching during installation of coupling housings. For the Victaulic Lubricant Safety Data Sheet (SDS), reference Victaulic publication 05.02, which can be downloaded at victaulic.com. **NOTE:** Victaulic Lubricant shall not be mixed with Poly Olester (POE) Oil during installation.

Canadian Customers – Canadian Workplace Hazardous Materials Information System (WHMIS) Requirements: Canadian customers shall contact Victaulic Canada for a Victaulic Lubricant SDS that meets Canadian WHMIS requirements.

NOTICE

- **Prior to assembly, Victaulic recommends maintaining lubricant and gaskets at temperatures above 0°C/32°F to prevent the lubricant from freezing and to ease installation onto the pipe ends.**



Victaulic Lubricant Usage Guide

The following table provides the **approximate** number of common-size gaskets that can be lubricated with a 4.5-ounce/127.5-gram tube or a 1-quart/32-ounce/907-gram container of Victaulic Lubricant. These values have been calculated using a thin coating of Victaulic Lubricant, as described in this section, and do not take into account any overuse or spillage.

NOTE: Victaulic Lubricant has full WRAS approval (Approval No. 0507514) and ANSI/NSF 61 approval.

Approximate shelf life of Victaulic Lubricant in tubes is 2 years beyond the manufacture date stamped on the container. Approximate shelf life of Victaulic Lubricant in quarts is 1 year beyond the manufacture date stamped on the container.

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Approximate Number of Gaskets	
		Per Tube	Per Quart
14 DN350	14.000 355.6	13	97
16 DN400	16.000 406.4	12	85
18 DN450	18.000 457.0	10	75
20 DN500	20.000 508.0	9	67
22 DN550	22.000 559.0	8	61
24 DN600	24.000 609.6	7	55
26 DN650	26.000 660.4	7	51
28 DN700	28.000 711.2	6	47
30 DN750	30.000 762.0	6	44
32 DN800	32.000 812.8	5	41
34 DN850	34.000 864.0	5	38
36 DN900	36.000 914.4	5	36
38 DN950	38.000 965.0	4	34

Continued on the following page

Victaulic Lubricant Usage Guide (Continued)

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Approximate Number of Gaskets	
		Per Tube	Per Quart
40 DN1000	40.000 1016.0	4	32
42 DN1050	42.000 1066.8	4	30
44 DN1100	44.000 1117.6	4	29
46 DN1150	46.000 1168.4	4	28
48 DN1200	48.000 1219.2	3	26
50 DN1250	50.000 1270.0	3	25
52 DN1300	52.000 1320.8	–	4
54 DN1350	54.000 1371.6	–	4
56 DN1400	56.000 1422.2	–	4
58 DN1450	58.000 1473.2	–	4
60 DN1500	60.000 1524.0	–	3
62 DN1550	62.000 1574.8	–	3
64 DN1600	64.000 1625.6	–	3
66 DN1650	66.000 1676.4	–	3
68 DN1700	68.000 1727.2	–	3
70 DN1750	70.000 1778.0	–	3
72 DN1800	72.000 1828.8	–	3
74 DN1850	72.000 1828.8	–	2
78 DN1950	74.000 1879.6	–	2
84 DN2100	80.000 2032.0	–	2
88 DN2200	84.000 2133.6	–	2
94 DN2350	90.000 2286.0	–	2
100 DN2500	96.000 2438.4	–	2

Spacing Requirements for Grooved Piping Systems

Victaulic®

I-W100_17

RECOMMENDED MINIMUM PIPE SPACING

Since Victaulic grooved pipe couplings are externally-mounted housings that contain bolt pads, consideration shall be given to external dimensions beyond the pipe outside diameter to allow for ease of installation, inspection, and insulation. **Always allow enough spacing between adjacent piping and couplings to provide access for tightening hardware and for bolt pad inspection. Bolt pads can be positioned in any orientation to prevent interference with other system components. NOTE:** Allowance for insulation, when necessary, is not included in the following examples.

Example with Bolt Pads Facing Each Other

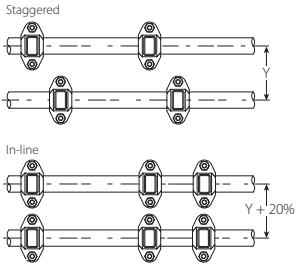
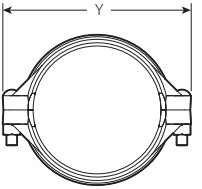


Illustration is exaggerated for clarity



For the example above, where the bolt pads are facing each other and the couplings are staggered, the pipe centerline shall be spaced with the "Y" dimension of the coupling housings. **NOTE:** The "Y" dimension is the widest point across the coupling housings (bolt pad to bolt pad).

For the example above, where the bolt pads are facing each other and the couplings are in-line with each other, add an additional 20% to the "Y" dimension.

Example with Bolt Pads Facing Away from Each Other

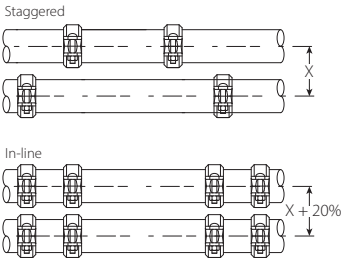
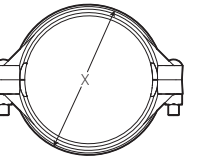


Illustration is exaggerated for clarity



For the example above, where the bolt pads are facing away from each other and the couplings are staggered, the pipe centerline shall be spaced with the "X" dimension of the coupling housings. **NOTE:** The "X" dimension is the narrowest point across the coupling housings (crown to crown).

For the example above, where the bolt pads are facing away from each other and the couplings are in-line with each other, add an additional 20% to the "X" dimension.

When installing grooved piping systems in confined areas, such as a pipe shaft, a tunnel, a narrow trench, or when joining riser pipe and dropping it through riser holes, consideration shall be given to the external clearance of the housings. This clearance shall be greater than the "Y" dimension (widest point). The necessary clearance will vary depending upon installation procedures, the proximity of other piping, and other factors.

Rigid Systems

Piping Support
Pipe Support Spacing
Allowable Pipe-End Separation

PIPING SUPPORT FOR RIGID SYSTEMS

⚠ WARNING

- **The values in the following tables are not intended to be used as specifications for all installations, and they DO NOT apply where critical calculations are made or where there are concentrated loads between supports. The installer shall adhere to the design engineer's calculations for each project.**
- **DO NOT attach supports directly to couplings. Attach supports only to adjoining pipe and equipment.**
- **DO NOT use piping joined with Victaulic grooved pipe products as a lift point. DO NOT climb or hang on pipe joined with these products.**
- **Victaulic is not responsible for system design, nor does the Company assume any responsibility for systems that are designed improperly.**
- **Piping support/design shall comply with any local code requirements and shall be verified by a system designer/engineer.**

Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.

Piping that is joined with grooved pipe couplings, like all other piping systems, requires support to carry the weight of piping, equipment, and fluid. The support or hanging method shall minimize stress on joints and allow pipeline movement, where required, along with other design requirements, such as drainage or venting. **NOTE:** Valves with unbalanced loads, particularly ones installed in horizontal pipelines within areas of high vibration, require support to resist external rotation.

RIGID SYSTEMS – PIPE SUPPORT SPACING FOR STANDARD-WEIGHT CARBON STEEL PIPE

The following table lists the suggested maximum span between pipe supports for horizontal, straight runs of standard-weight carbon steel pipe (without concentrated loads) that carries water or similarly dense liquids.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Suggested Maximum Span Between Pipe Supports feet/meters					
		Water Service			Gas or Air Service		
		*	†	‡	*	†	‡
14 DN350	14.000 355.6	23 7.0	25 7.6	15 4.6	30 9.1	33 10.1	15 4.6
	14.843 377.0	23 7.0	25 7.6	15 4.6	30 9.1	33 10.1	15 4.6
16 DN400	16.000 406.4	27 8.2	25 7.6	15 4.6	35 10.7	33 10.1	15 4.6
	16.772 426.0	27 8.2	25 7.6	15 4.6	35 10.7	33 10.1	15 4.6
18 DN450	18.000 457.2	27 8.2	25 7.6	15 4.6	35 10.7	33 10.1	15 4.6
	18.898 480.0	27 8.2	25 7.6	15 4.6	35 10.7	33 10.1	15 4.6
20 DN500	20.000 508.0	30 9.1	25 7.6	15 4.6	39 11.9	33 10.1	15 4.6
	20.866 530.0	30 9.1	25 7.6	15 4.6	39 11.9	33 10.1	15 4.6
22 DN550	22.000 558.8	30 9.1	25 7.6	15 4.6	39 11.9	33 10.1	15 4.6
24 DN600	24.000 609.6	32 9.8	25 7.6	15 4.6	42 12.8	33 10.1	15 4.6
	24.803 630.0	32 9.8	25 7.6	15 4.6	42 12.8	33 10.1	15 4.6
26 – 30 DN650 – DN750	26.000 – 30.000 660.4 – 762.0	30 9.1	Contact Victaulic for support recommendations in these sizes and services.				
32 – 38 DN800 – DN950	32.000 – 38.000 812.8 – 965.2	31 9.4					
40 – 46 DN1000 – DN1150	40.000 – 46.000 1016.0 – 1168.4	35 10.7					
48 – 50 DN1200 – DN1250	48.000 – 50.000 1219.2 – 1270.0	36 11.0					

*Spacing corresponds to ASME B31.1 Power Piping Code
†Spacing corresponds to ASME B31.9 Building Services Piping Code
‡Spacing corresponds to NFPA 13 Fire Sprinkler Systems

RIGID SYSTEMS – PIPE SUPPORT SPACING FOR LIGHT-WALL STAINLESS STEEL PIPE

The following table lists the suggested maximum span between pipe supports for horizontal, straight runs of light-wall stainless steel pipe (without concentrated loads) that carries water or similarly dense liquids.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Wall Thickness		Suggested Maximum Span Between Pipe Supports
		inches/ mm	Schedule	feet/ meters
14 DN350	14.000 355.6	0.188 4.78	10S	21 6.4
16 DN400	16.000 406.4	0.188 4.78	10S	22 6.7
18 DN450	18.000 457.2	0.188 4.78	10S	22 6.7
20 DN500	20.000 508.0	0.218 5.54	10S	24 7.3
22 DN550	22.000 558.8	0.218 5.54	10S	24 7.3
24 DN600	24.000 609.6	0.250 6.35	10S	25 7.6

NOTE: Contact Victaulic for applications above 24 inch/DN600.

NOMINAL PIPE-END SEPARATION FOR AGS RIGID COUPLINGS ON DIRECT-GROOVED PIPE OR PIPE PREPARED WITH AGS *VIC-RINGS*

The nominal pipe-end separation dimensions, shown in the table below, are provided for system layout and installation purposes and apply only to pipe that is roll grooved to AGS specifications or prepared with AGS *Vic-Rings* for Style W07/LW07 and W89 AGS Rigid Couplings. Victaulic Style W07/LW07 and W89 AGS Rigid Couplings are considered rigid connections and will not accommodate expansion or contraction of the piping system.

Nominal Pipe Size inches DN	Coupling/ AGS *Vic-Ring* Size inches/mm	Nominal Pipe-End Separation inches/mm
12 – 22 DN300 – DN550	14.000 – 24.000 355.6 – 609.6	0.25 6.4
24 – 36 DN600 – DN900	26.000 – 38.000 660.4 – 965.0	0.38 9.7
38 – 48 DN950 – DN1200	40.000 – 50.000 1016.0 – 1270.0	0.44 11.2

NOTE: Style W89 AGS Rigid Couplings are available only in 14–24-inch/DN350–DN600 sizes.

Flexible Systems

Piping Support
Pipe Support Spacing
Allowable Pipe-End Separation

PIPING SUPPORT FOR FLEXIBLE SYSTEMS

⚠ WARNING

- **The values in the following tables are not intended to be used as specifications for all installations, and they DO NOT apply where critical calculations are made or where there are concentrated loads between supports. The installer shall adhere to the design engineer's calculations for each project.**
- **DO NOT attach supports directly to couplings. Attach supports only to adjoining pipe and equipment.**
- **DO NOT use piping joined with Victaulic grooved pipe products as a lift point. DO NOT climb or hang on pipe joined with these products.**
- **Victaulic is not responsible for system design, nor does the Company assume any responsibility for systems that are designed improperly.**
- **Piping support/design shall comply with any local code requirements and shall be verified by a system designer/engineer.**

Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.

Piping that is joined with grooved pipe couplings, like all other piping systems, requires support to carry the weight of piping, equipment, and fluid. The support or hanging method shall minimize stress on joints and allow pipeline movement, where required, along with other design requirements, such as drainage or venting. The system designer shall consider the special requirements of flexible couplings while designing a support system. **NOTE:** Valves with unbalanced loads, particularly ones installed in horizontal pipelines within areas of high vibration, require support to resist external rotation.

FLEXIBLE SYSTEMS – PIPE SUPPORT SPACING

The following table lists the suggested minimum number of pipe supports per standard-weight carbon steel pipe length for straight runs without concentrated loads, where full linear movement **IS REQUIRED**. The values provided are for Style W77, W77B, and W77N Flexible Couplings, installed with standard carbon steel hardware, at full operating pressure. For alternate hardware, operating pressures, or design spacing requirements, contact Victaulic.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Pipe Length in feet/meters									
		7 2.1	10 3.0	12 3.7	15 4.6	20 6.1	22 6.7	25 7.6	30 9.1	35 10.7	40 12.2
		*Average Hangers Per Pipe Length – Evenly Spaced									
14 – 16 DN350 – DN400	14.000 – 16.000 355.6 – 406.4	1	1	1	2	2	2	2	3	3	3
18 – 24 DN450 – DN600	18.000 – 24.000 457.2 – 609.6	1	1	1	2	2	2	2	3	3	3
26 – 72 DN650 – DN1800	26.000 – 72.000 660.4 – 1828.8	1	1	1	1	2	2	2	3	3	3

*Pipe lengths shall not be left unsupported between any two couplings
For project-specific requirements outside of the values provided, contact Victaulic.

The following table lists the suggested maximum span between pipe supports for standard-weight carbon steel pipe for straight runs without concentrated loads, where full linear movement **IS NOT REQUIRED**. The values provided are for Style W77, W77B, and W77N Flexible Couplings, installed with standard carbon steel hardware, at full operating pressure. For alternate hardware, operating pressures, or design spacing requirements, contact Victaulic.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Suggested Maximum Span Between Pipe Supports feet/meters
14 – 16 DN350 – DN400	14.000 – 16.000 355.6 – 406.4	18 5.5
18 – 24 DN450 – DN600	18.000 – 24.000 457.2 – 609.6	20 6.1
26 – 72 DN650 – DN1800	26.000 – 72.000 660.4 – 1828.8	21 6.4

For project-specific requirements outside of the values provided, contact Victaulic.

NOMINAL PIPE-END SEPARATION AND PIPELINE DEFLECTION FOR AGS FLEXIBLE COUPLINGS ON DIRECT-GROOVED PIPE

The nominal pipe-end separation and deflection from centerline dimensions, shown in the table below, are the maximum nominal range of movement available at each joint for pipe that is roll grooved to AGS specifications for Style W77, W77B, and W77N AGS Flexible Couplings. For design and installation purposes, these values may be reduced by 25%.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Pipe-End Separation inches/mm		Nominal Deflection from Centerline	
		Minimum	Maximum	Degrees Per Coupling	in/ft mm/m
14 DN350	14.000 355.6	0.13 3.3	0.31 7.9	0.73	0.154 12.86
	14.843 377.0	0.13 3.3	0.31 7.9	0.69	0.146 12.13
16 DN400	16.000 406.4	0.13 3.3	0.31 7.9	0.64	0.135 11.25
	16.772 426.0	0.13 3.3	0.31 7.9	0.61	0.129 10.73
18 DN450	18.000 457.2	0.13 3.3	0.31 7.9	0.57	0.120 10.00
	18.898 480.0	0.13 3.3	0.31 7.9	0.54	0.114 9.52
20 DN500	20.000 508.0	0.13 3.3	0.31 7.9	0.51	0.108 9.00
	20.866 530.0	0.13 3.3	0.31 7.9	0.49	0.104 8.63
22 DN550	22.000 558.8	0.13 3.3	0.31 7.9	0.46	0.098 8.18
24 DN600	24.000 609.6	0.13 3.3	0.31 7.9	0.42	0.090 7.50
	24.803 630.0	0.13 3.3	0.31 7.9	0.41	0.087 7.26
26 DN650	26.000 660.4	0.15 3.8	0.53 13.5	0.83	0.175 14.62
28 DN700	28.000 711.2	0.15 3.8	0.53 13.5	0.77	0.163 13.57
	28.346 720.0	0.15 3.8	0.53 13.5	0.76	0.161 13.40
30 DN750	30.000 762.0	0.15 3.8	0.53 13.5	0.72	0.152 12.67
32 DN800	32.000 812.8	0.15 3.8	0.53 13.5	0.68	0.143 11.87
	32.283 820.0	0.15 3.8	0.53 13.5	0.67	0.141 11.77
34 DN850	34.000 863.6	0.15 3.8	0.53 13.5	0.64	0.134 11.18
36 DN900	36.000 914.4	0.15 3.8	0.53 13.5	0.60	0.127 10.56

NOMINAL PIPE-END SEPARATION AND PIPELINE DEFLECTION FOR AGS FLEXIBLE COUPLINGS ON DIRECT-GROOVED PIPE (CONTINUED)

The nominal pipe-end separation and deflection from centerline dimensions, shown in the table below, are the maximum nominal range of movement available at each joint for pipe that is roll grooved to AGS specifications for Style W77, W77B, and W77N AGS Flexible Couplings. For design and installation purposes, these values may be reduced by 25%.

Nominal Size inches DN	Actual Pipe Outside Diameter inches/mm	Pipe-End Separation inches/mm		Nominal Deflection from Centerline	
		Minimum	Maximum	Degrees Per Coupling	in/ft mm/m
	36.220 920.0	0.15 3.8	0.53 13.5	0.60	0.126 10.49
38 DN950	38.000 965.2	0.15 3.8	0.53 13.5	0.57	0.120 10.00
40 DN1000	40.000 1016.0	0.21 5.3	0.59 15.0	0.54	0.114 9.50
42 DN1050	42.000 1066.8	0.21 5.3	0.59 15.0	0.51	0.109 9.05
44 DN1100	44.000 1117.6	0.21 5.3	0.59 15.0	0.49	0.104 8.64
46 DN1150	46.000 1168.4	0.21 5.3	0.59 15.0	0.47	0.099 8.26
48 DN1200	48.000 1219.2	0.21 5.3	0.59 15.0	0.45	0.095 7.92
50 DN1250	50.000 1270.0	0.21 5.3	0.59 15.0	0.43	0.091 7.60
52 DN1300	52.000 1320.8	0.28 7.1	0.66 16.8	0.41	0.088 7.31
54 DN1350	54.000 1371.6	0.28 7.1	0.66 16.8	0.40	0.084 7.04
56 DN1400	56.000 1422.4	0.28 7.1	0.66 16.8	0.38	0.081 6.79
58 DN1450	58.000 1473.2	0.28 7.1	0.66 16.8	0.37	0.079 6.55
60 DN1500	60.000 1524.0	0.28 7.1	0.66 16.8	0.36	0.076 6.33
62 DN1550	62.000 1574.8	0.28 7.1	0.66 16.8	0.35	0.074 6.13
64 DN1600	64.000 1625.6	0.28 7.1	0.66 16.8	0.34	0.071 5.94
66 DN1650	66.000 1676.4	0.28 7.1	0.66 16.8	0.32	0.069 5.76
68 DN1700	68.000 1727.2	0.28 7.1	0.66 16.8	0.32	0.067 5.59
70 DN1750	70.000 1778.0	0.28 7.1	0.66 16.8	0.31	0.065 5.43
72 DN1800	72.000 1828.8	0.28 7.1	0.66 16.8	0.30	0.063 5.28

NOMINAL PIPE-END SEPARATION AND PIPELINE DEFLECTION FOR AGS FLEXIBLE COUPLINGS ON PIPE PREPARED WITH AGS *VIC-RINGS*

The nominal pipe-end separation and deflection from centerline dimensions, shown in the table below, are the maximum nominal range of movement available at each joint for pipe that is prepared with AGS *Vic-Rings* for Style W77, W77B, and W77N AGS Flexible Couplings. For design and installation purposes, these values may be reduced by 25%.

Nominal Pipe Size inches DN	Coupling/ AGS *Vic-Ring* Size inches/mm	Pipe-End Separation inches/mm		Nominal Deflection from Centerline	
		Minimum	Maximum	Degrees Per Coupling	in/ft mm/m
12 DN300	14.000 355.6	0.13 3.3	0.31 7.9	0.73	0.154 12.86
14 DN350	16.000 406.4	0.13 3.3	0.31 7.9	0.64	0.135 11.25
16 DN400	18.000 457.2	0.13 3.3	0.31 7.9	0.57	0.120 10.00
18 DN450	20.000 508.0	0.13 3.3	0.31 7.9	0.51	0.108 9.00
20 DN500	22.000 558.8	0.13 3.3	0.31 7.9	0.46	0.098 8.18
22 DN550	24.000 609.6	0.13 3.3	0.31 7.9	0.42	0.090 7.50
24 DN600	26.000 660.4	0.15 3.8	0.53 13.5	0.83	0.175 14.62
26 DN650	28.000 711.2	0.15 3.8	0.53 13.5	0.77	0.163 13.57
28 DN700	30.000 762.0	0.15 3.8	0.53 13.5	0.72	0.152 12.67
30 DN750	32.000 812.8	0.15 3.8	0.53 13.5	0.68	0.143 11.87
32 DN800	34.000 863.6	0.15 3.8	0.53 13.5	0.64	0.134 11.18
34 DN850	36.000 914.4	0.15 3.8	0.53 13.5	0.60	0.127 10.56
36 DN900	38.000 965.2	0.15 3.8	0.53 13.5	0.57	0.120 10.00
38 DN950	40.000 1016.0	0.21 5.3	0.59 15.0	0.54	0.114 9.50
40 DN1000	42.000 1066.8	0.21 5.3	0.59 15.0	0.51	0.109 9.05
42 DN1050	44.000 1117.6	0.21 5.3	0.59 15.0	0.49	0.104 8.64
44 DN1100	46.000 1168.4	0.21 5.3	0.59 15.0	0.47	0.099 8.26
46 DN1150	48.000 1219.2	0.21 5.3	0.59 15.0	0.45	0.095 7.92
48 DN1200	50.000 1270.0	0.21 5.3	0.59 15.0	0.43	0.091 7.60
50 DN1250	52.000 1320.8	0.28 7.1	0.66 16.8	0.41	0.088 7.31

NOMINAL PIPE-END SEPARATION AND PIPELINE DEFLECTION FOR AGS FLEXIBLE COUPLINGS ON PIPE PREPARED WITH AGS *VIC-RINGS* (CONTINUED)

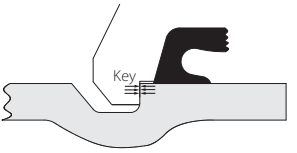
The nominal pipe-end separation and deflection from centerline dimensions, shown in the table below, are the maximum nominal range of movement available at each joint for pipe that is prepared with AGS *Vic-Rings* for Style W77, W77B, and W77N AGS Flexible Couplings. For design and installation purposes, these values may be reduced by 25%.

Nominal Pipe Size inches DN	Coupling/ AGS *Vic-Ring* Size inches/mm	Pipe-End Separation inches/mm		Nominal Deflection from Centerline	
		Minimum	Maximum	Degrees Per Coupling	in/ft mm/m
52 DN1300	54.000 1371.6	0.28 7.1	0.66 16.8	0.40	0.084 7.04
54 DN1350	56.000 1422.2	0.28 7.1	0.66 16.8	0.38	0.081 6.79
56 DN1400	58.000 1473.2	0.28 7.1	0.66 16.8	0.37	0.079 6.55
58 DN1450	60.000 1524.0	0.28 7.1	0.66 16.8	0.36	0.076 6.33
60 DN1500	62.000 1574.8	0.28 7.1	0.66 16.8	0.35	0.074 6.13
62 DN1550	64.000 1625.6	0.28 7.1	0.66 16.8	0.34	0.071 5.94
64 DN1600	66.000 1676.4	0.28 7.1	0.66 16.8	0.32	0.069 5.76
66 DN1650	68.000 1727.2	0.28 7.1	0.66 16.8	0.32	0.067 5.59
68 DN1700	70.000 1778.0	0.28 7.1	0.66 16.8	0.31	0.065 5.43
70 DN1750	72.000 1828.8	0.28 7.1	0.66 16.8	0.30	0.063 5.28
72 DN1800	74.000 1879.6	0.28 7.1	0.66 16.8	0.29	0.062 5.14
74 DN1850	78.000 1981.2	0.28 7.1	0.66 16.8	0.27	0.058 4.87
80 DN2000	84.000 2133.6	0.28 7.1	0.66 16.8	0.25	0.054 4.52
84 DN2100	88.000 2235.2	0.28 7.1	0.66 16.8	0.24	0.052 4.32
90 DN2250	94.000 2387.6	0.00 0.00	0.90 22.9	0.54	0.115 9.57
96 DN2400	100.000 2540.0	0.00 0.00	0.90 22.9	0.51	0.108 9.00

INSTALLATION TO ACHIEVE MAXIMUM LINEAR MOVEMENT CAPABILITIES OF FLEXIBLE SYSTEMS

To achieve maximum expansion/contraction allowance, pipe joints shall be installed with proper spacing between the pipe ends. The following is an overview of methods to accommodate expansion/contraction. For complete information, refer to Victaulic Section 26 publications, which can be downloaded at victaulic.com.

For maximum expansion, pipe ends shall be at their maximum gap within the coupling.



PROPER INSTALLATION FOR EXPANSION

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

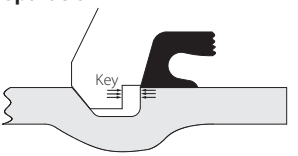
1. Vertical systems can be installed as the pipe is lowered by assembling the couplings and using the weight of the pipe to pull the pipe ends open.

For horizontal systems, select method 2a or 2b.

2a. Anchor the system at one end, and install the couplings and proper guides. Cap the system, pressurize it to fully open the pipe ends, then anchor the other end with the pipe ends fully gapped.

2b. Install the couplings. Use rigging equipment to pull the pipe for full end separation, then secure the pipe to maintain the opening.

For maximum contraction, pipe ends shall be installed at the minimum pipe-end separation.



PROPER INSTALLATION FOR CONTRACTION

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

1. In vertical systems, stack the pipe by using the weight to butt the pipe ends, then anchor the pipe to maintain the position.

2. In horizontal systems, install the pipe ends at the minimum pipe-end separation by using the coupling's "come-along" feature to adjust the pipe ends, then secure the pipe in position.

For Expansion and Contraction

1. Alternate the above procedures in proportion to the need for expansion and contraction.

Groove/Coupling Gapping

For expansion, visible gaps on either side of the coupling housings' key section (between the coupling housings' key section and the rear edge of the groove) can be used to verify proper installation of most couplings for maximum movement. These gaps are approximately equal to half the linear movement capability. Piping shall be secured to maintain the desired position.

For pipe contraction, virtually no gap should be visible between the coupling housings' key section and the rear edge of the groove. Piping shall be secured to maintain the desired position.

Installation Overview

Impact Wrench Usage Guidelines
Impact Wrench Selection
Torque Wrench Selection
Installation Requirements
Installation Inspection
System Testing
European ATEX Directive Notice

IMPACT WRENCH USAGE GUIDELINES

Victaulic recommends initial assembly of AGS products using readily-available ratcheting hand tools. Impact wrenches or pneumatic/hydraulic torque wrenches may be used to facilitate assembly.

Impact wrenches do not provide the installer with direct "wrench feel" to judge nut torque. Since some impact wrenches are capable of high output speed and torque, it is important to develop a familiarity with the impact wrench to avoid over-torquing, which may damage or fracture the bolts or coupling housings during installation.

⚠ WARNING

- **DO NOT exceed the required bolt torque values specified in the applicable product's installation instructions.**

Failure to follow these instructions could cause joint failure, resulting in property damage, serious personal injury, or death.

Assemble couplings per the applicable Victaulic installation instructions in this handbook. Continue to tighten the nut(s) until the visual inspection requirements and torque value are achieved. Visual inspection of each joint is required for verification of proper assembly.

During the installation process, the installation torque shall not exceed the required bolt torque values specified in the applicable product's installation instructions. Conditions that may result in non-pad-to-pad conditions at the required bolt torque include, but are not limited to, the following:

- **Uneven tightening of hardware –** For couplings containing two or more bolts, the nuts shall be tightened evenly by alternating sides until the visual inspection requirements and required torque value are achieved for the particular coupling.
- **Out-of-specification grooved pipe end dimensions (particularly large and out-of-specification "C" diameters) –** If proper assembly is not achieved, remove the coupling and confirm that all grooved pipe end dimensions are within Victaulic specifications. If grooved pipe end dimensions are not within Victaulic specifications, rework the pipe ends by following all instructions in the applicable pipe preparation tool's operating and maintenance manual.
- **Continued tightening of nut(s) after the visual inspection requirements and torque values are achieved –** DO NOT continue to tighten the nut(s) after the visual inspection requirements and torque values are achieved. Continuing to tighten the hardware after proper visual inspection requirements are achieved will cause joint failure, resulting in property damage, serious personal injury, or death. In addition, continued tightening may cause excessive stresses that compromise the long-term integrity of the bolts and may cause joint failure, resulting in property damage, serious personal injury, or death. Additional bolt torque will not provide a better installation; bolt torque that exceeds the required bolt torque values specified in the applicable product's installation instructions could damage or fracture the bolts and/or the coupling's bolt pads during installation.
- **Pinched gasket –** A pinched gasket could result in the inability to achieve proper visual inspection requirements. The coupling shall be disassembled and inspected to verify that the gasket is not pinched. If the gasket is pinched, a new coupling assembly or gasket shall be used.
- **Coupling was not assembled per the instructions in this handbook –** Adherence to installation instructions will help to avoid the conditions covered in this section.

If you suspect that any hardware has been over-torqued, the entire coupling assembly shall be replaced immediately (as indicated by a bend in the bolt, bulging of the nut at the bolt pad interface, or damage to the bolt pad, etc.).

IMPACT WRENCH SELECTION

Appropriate selection of an impact wrench is required to ensure proper installation in accordance with the applicable coupling installation instructions. Improper impact wrench selection could cause coupling mis-assembly and damage, resulting in property damage, serious personal injury, or death.

To determine the suitability of an impact wrench, perform trial installation assemblies with a standard socket wrench or a torque wrench. These trial coupling assemblies shall meet the visual inspection requirements and required torque value for the coupling being installed. After visual installation requirements are achieved, measure the torque applied to each nut with a torque wrench. Using the torque value measured, select an impact wrench with a torque output or torque output setting that conforms to the measured value but does not exceed the bolt torque values specified in the applicable product's installation instructions.

A torque wrench or equivalent is required to complete proper assembly of AGS products. Following initial assembly with an impact wrench, the required torque shall be applied to each set of hardware, as detailed in the product's installation instructions.

Selection of an Impact Wrench:

Impact Wrenches with Single Output Torque – Selection of an impact wrench with an output torque considerably higher than the required installation torque could result in hardware and/or coupling damage due to the possibility of hardware over-torque. Under no circumstances shall an impact wrench be selected for use that has a torque output setting that exceeds the bolt torque values specified in the applicable product's installation instructions.

Impact Wrenches with Multiple Output Torque Settings – If an impact wrench with multiple output torque settings is selected, the impact wrench shall have at least one torque setting that satisfies the above requirements for an "Impact Wrench with Single Output Torque."

Use of impact wrenches with excessive output torques creates installation difficulties for the installer due to the tool's unmanageable rotational speed and power. Using the same method above, periodically check nut torque on coupling assemblies throughout the system installation process.

For safe and proper use of impact wrenches, always refer to the impact wrench manufacturer's operating instructions. In addition, verify that proper impact grade sockets are being used for coupling installation.

⚠ WARNING

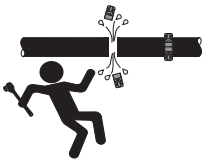
Failure to follow instructions for tightening hardware could result in:
- **Bolt damage or fracture**
- **Damaged or broken bolt pads or fractures to housings**
- **Joint leakage and property damage**
- **A negative impact on system integrity**
- **Personal injury or death**

TORQUE WRENCH SELECTION

A torque wrench shall be selected with a torque range that is in accordance with the required bolt torque for the applicable product being installed. For 14 – 24-inch/DN350 – DN600 sizes, a manual torque wrench may be used. Victaulic recommends pneumatic or hydraulic torque wrenches for sizes larger than 24 inch/DN600. The selected torque wrench shall be certified and calibrated in accordance with a recognized national standard. Always refer to the instructions supplied with the torque wrench for proper usage and selection of desired torque value.

INSTALLATION REQUIREMENTS

⚠ WARNING



- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**

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

- Always reference the operating and maintenance manual for the applicable pipe preparation tool and the specific product instructions in this handbook for complete safety and operating/installation requirements.
- **When joining pipe of the same size but different wall thicknesses/schedules, the joint rating will be based on the pressure rating of the thinner-wall pipe.**
- The mating components' outside diameter ("OD"), groove dimensions, and maximum allowable flare diameter shall be within the tolerances published in current Victaulic groove specifications.
- Always check gasket material grade to verify that it is suitable for the intended service.
- When an assembly torque value is specified for coupling installation, the torque **SHALL** be applied to the nuts to achieve proper installation. Torque beyond the specified values will not improve sealing. Exceeding the specified torque by more than 10% may cause product damage, resulting in joint failure and property damage.
- Deep-well sockets are required for proper installation of AGS Couplings. Deep-well sockets provide full nut engagement during tightening.
- Verify that the oval neck of each bolt seats proper in the bolt hole, as shown below.

GOOD BOLT ENGAGEMENT (OVAL NECK OF EACH BOLT IS SEATED PROPERLY IN THE BOLT HOLE)

BAD BOLT ENGAGEMENT (OVAL NECK OF BOLT IS NOT SEATED PROPERLY IN THE BOLT HOLE)

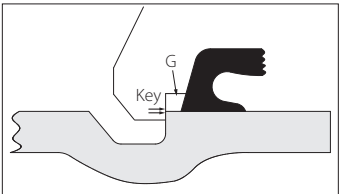
INSTALLATION INSPECTION

⚠ WARNING

- **Always inspect each joint to verify proper product installation.**
- **Undersized or oversized pipes/fittings, shallow grooves, eccentric grooves, bolt pad gaps, etc. are unacceptable. Any of these conditions shall be corrected before attempting to pressurize the system.**

Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.

Installations with Undersized Pipe/Fittings – NOT ACCEPTABLE



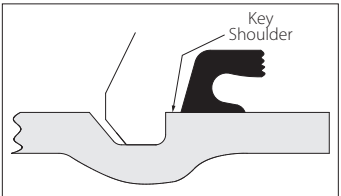
Undersized Pipe/Fitting

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

When the OD of the pipe or fitting is below tolerance, engagement of the housings' key sections is lowered considerably. THIS RESULTS IN REDUCED WORKING PRESSURE FOR THE JOINT.

Additionally, there is little or no added compression of the gasket. The increased gap "G" between the pipe and the housing may also result in gasket extrusion. These factors can contribute to reduced gasket life, joint leakage, and property damage.

Installations with Oversized Pipe/Fittings – NOT ACCEPTABLE

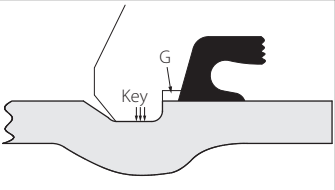


Oversized Pipe/Fitting

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

When the OD of the pipe or fitting exceeds the allowable tolerance, engagement of the housings' key sections is increased to the point that the shoulder can grip onto the pipe and can result in reduced linear or angular movement. Under these conditions, metal-to-metal bolt pad contact may not be achieved, the gasket may become extruded, the working pressure of the joint may be reduced, and gasket life may be reduced.

Installations on Pipe with Shallow Grooves – NOT ACCEPTABLE

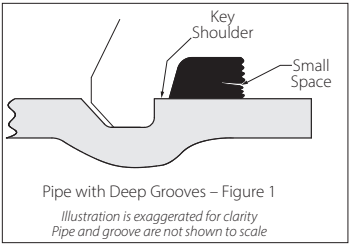


Shallow Groove

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

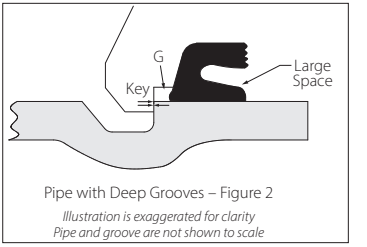
A groove that is shallow (not deep enough) will have the same effect as the conditions described in the "Installations with Undersized Pipes/Fittings" section above. In addition, this condition may prevent metal-to-metal bolt pad contact from being achieved, resulting in joint failure and property damage. If the groove is shallow (not deep enough), re-groove the pipe to Victaulic specifications by following the instructions in the applicable pipe preparation tool's operating and maintenance manual.

Installations on Pipe with Deep Grooves – NOT ACCEPTABLE



Pipe with Deep Grooves – Figure 1

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

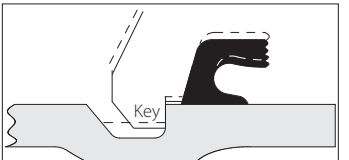


Pipe with Deep Grooves – Figure 2

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

A groove that is too deep will allow the coupling to shift so that one housing will have full key engagement (Figure 1 above) and the other housing will have significantly reduced key engagement (Figure 2 above). This will have the same effect as the conditions described in the "Installations with Undersized Pipe/Fittings" section. Additionally, roll grooving pipe to an undersized dimension may overstress and weaken the pipe wall. Cut grooving pipe to an undersized dimension will result in insufficient wall thickness under the groove. If the groove is too deep, discard that section of pipe and groove another section to Victaulic specifications.

Installations on Pipe with Eccentric Grooves – NOT ACCEPTABLE



Eccentric Groove

Illustration is exaggerated for clarity
Pipe and groove are not shown to scale

An eccentric groove is a groove that is too shallow on one side and too deep on the other side. Generally, eccentric grooves occur when out-of-round pipe is grooved with a stationary tool bit, such as the case with a lathe, and they can also occur when roll grooving pipe with large wall thickness variations. Eccentric grooves may lead to a combination of the conditions outlined in the "Installations with Oversized Pipes/ Fittings" section and the "Installations on Pipes with Shallow Grooves" section.

Bolt Pad Gaps – NOT ACCEPTABLE

Always refer to the instructions in this handbook for the applicable product. Unless stated otherwise in the specific product's installation instructions, Victaulic grooved pipe couplings **SHALL** be assembled with metal-to-metal bolt pad contact, and any specified torque values shall be achieved at each set of hardware. Any questions regarding an installation should be directed to Victaulic (scan the QR code on the back cover of this handbook for a listing of locations and contact information).

If the bolt pads are not in metal-to-metal contact:

- Verify that the hardware has been tightened evenly by alternating bolt pad locations, in accordance with the instructions in this handbook for the applicable product.
- Verify that the coupling keys are engaged with the grooves. Coupling keys shall not rest on the outside surface of the pipe.
- Verify that the gasket has not fallen/shifted into the grooves in the pipe/*Vic-Ring*.
- Verify that the gasket is not pinched at the bolt pad locations. Pinched gaskets shall be replaced immediately.
- Verify that oversized pipe or fittings were not used (reference the "Installation with Oversized Pipe/Fittings" section on the previous page).
- Verify that the grooves conform to Victaulic specifications (reference the "Installations on Pipe with Shallow Grooves, Installations on Pipe with Deep Grooves, and Installations on Pipe with Eccentric Grooves" sections above and on the previous page).

SYSTEM TESTING

System testing shall be in accordance with any jobsite requirements and any local or national codes and requirements.

Always re-inspect joints before and after the field test to identify points of improper installation. Look for gaps at the bolt pads and/or keys that ride up on the shoulders. If any of these conditions exist, depressurize the system and replace any questionable joints.

NOTICE

- **A SUCCESSFUL INITIAL SYSTEM PRESSURE TEST DOES NOT VALIDATE PROPER INSTALLATION AND IS NOT A GUARANTEE OF LONG-TERM PERFORMANCE.**
- **Victaulic will not assume any liability for pipe joint leakage or failure that may result from an installer's failure to follow installation instructions.**
- **As with any pipe joining method, success is determined by close attention to details. Careful adherence to the instructions found in this handbook is critical to ensure maximum system reliability.**

EUROPEAN ATEX DIRECTIVE

For applications involving compliance with the European ATEX Directive, the following "NOTICE" applies.

NOTICE

Stainless Steel Rigid Couplings Installed with Stainless Steel Pipe and Fittings
Galvanized Rigid Couplings Installed with Galvanized and Uncoated Steel Pipe and Galvanized Fittings

- **When used in applications where the atmosphere is potentially combustible, Victaulic's product installation instructions shall be strictly followed to ensure that the couplings are engaged properly in the pipe grooves and that the housings are assembled with full metal-to-metal bolt pad contact.**
- **Electrical conductivity shall be checked routinely (electrostatic resistance not to exceed 10^6 Ohm when measured across a properly installed pipe-to-pipe or pipe-to-fitting joint).**

REQUIRED TOOLS AND SUPPLIES FOR INSTALLATION

Confirm that the correct quantity of applicable hardware and housings has been supplied for the connection being made. Inspect gasket size, gasket material grade, and hardware size to verify suitability for the intended service.

The following tools and supplies are required for all AGS Coupling and Flange Adapter installations.

- PPE Required by Jobsite (hardhat, leather gloves, safety glasses, steel-toe shoes)
- Victaulic Lubricant or Other Compatible Lubricant
- Appropriate Bolt Thread Lubricant
- Brushes for Lubrication
- Deep-Well Impact Sockets
- Long-Handle Ratchet Wrench
- Torque Wrench – Victaulic recommends a hydraulic or pneumatic torque wrench for 24-inch/DN600 and larger sizes (refer to the "Torque Wrench Selection" section in this handbook)
- Reaction/Slugging Wrench (when using studs in place of oval neck track bolts)
- Towels (for cleaning gasket and gasket pocket, as needed)
- Water Bottle (for misting lubricated gaskets in hot environments, as needed)

In addition to the above list, the following tools and supplies are required for installation of all 24-inch/DN600 and larger AGS Couplings.

- Lifting Beam/Spreader Bar (Lifting beam/spreader bar shall be wider than the coupling's "Y" dimension listed in the "Product Data" section of this handbook)
- Lifting Slings/Straps (Verify that the rating of the lifting slings/straps and rigging method is greater than the lifting capacity listed on the coupling housings)
- Screw-Pin Shackles
  - Style W07/W77 Couplings in 26 – 50-inch/DN650 – DN1250 sizes have a 1-inch/25-mm diameter lifting lug hole (1-inch/25-mm minimum shackle opening width required)
  - Style W77B Couplings in 54 – 88-inch/DN1350 – DN2200 sizes have a 1 ¼-inch/32-mm diameter lifting lug hole (1-inch/25-mm minimum shackle opening width required)
  - Style W77B Couplings in 94 – 100-inch/DN2350 – DN2500 sizes have a 1 9/16-inch/40-mm diameter lifting lug hole (1 ¼-inch/32-mm minimum shackle opening width required)

Advanced Groove System (AGS) Couplings for AGS Direct-Grooved Pipe or AGS *Vic-Ring* Applications

Installation Instructions

Victaulic®

I-W100_39

Style W07 - Rigid Coupling (24-inch/DN600 and Smaller Sizes)
Style LW07 - Rigid Coupling (14 – 16-inch/DN350 – DN400 Sizes)
Style W77 - Flexible Coupling (24-inch/DN600 and Smaller Sizes)
Style W89 - Rigid Coupling for Direct-Grooved Stainless Steel Pipe or Carbon Steel Pipe Prepared with AGS *Vic-Rings* (24-inch/DN600 and Smaller Sizes)

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **These installation instructions are intended for an experienced, trained installer. The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **Wear safety glasses, hardhat, and foot protection.**

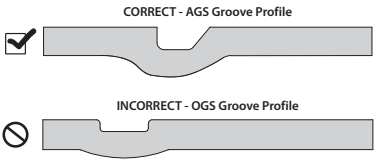
Failure to follow these instructions could result in death or serious personal injury and property damage.

NOTICE

The following installation steps feature photos of a Style W07/LW07 AGS Rigid Coupling on AGS direct-grooved pipe. Note that the same steps apply to installation of the following:

- **Style W77 AGS Flexible Couplings on AGS direct-grooved pipe**
- **Installation of Style W07 and W77 Couplings on pipe prepared with AGS *Vic-Rings***
- **Style W89 AGS Rigid Couplings on AGS direct-grooved stainless steel pipe**
- **Installation of Style W89 AGS Rigid Couplings on carbon steel pipe prepared with AGS *Vic-Rings***

⚠ WARNING



- **DO NOT attempt to assemble Style W07/LW07, W77, or W89 AGS Couplings on pipe that is direct-grooved with OGS roll sets.**

Failure to follow this instruction will cause improper assembly and joint failure, resulting in death or serious personal injury and property damage.

STYLE W07/LW07, W77, and W89 COUPLINGS HAVE A TORQUE REQUIREMENT. REFER TO THE INSTRUCTIONS ON THE FOLLOWING PAGES OR THE MARKINGS ON THE HOUSINGS FOR THE TORQUE REQUIREMENT.

1. PREPARE PIPE: Prepare the pipe by following the appropriate "Pipe End Inspection and Preparation" section on pages 2 – 4 in this handbook. **Support both pipe lengths securely. Pipe support shall be maintained throughout the entire installation procedure.**

⚠ CAUTION

- **A thin coat of a compatible lubricant shall be applied to the gasket sealing lips, gasket exterior, and the interior surface of each coupling housing to help prevent the gasket from pinching, rolling, or tearing during installation.**

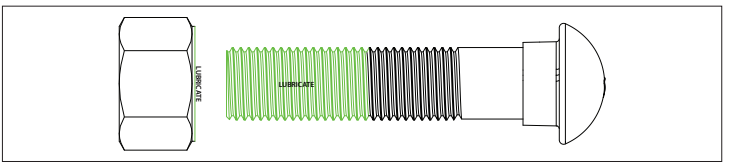
Failure to use a compatible lubricant may cause gasket damage, resulting in joint leakage and property damage.

2a. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. **For complete compatibility information, reference Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com.**

2b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, Victaulic Lubricant or silicone grease, to the gasket sealing lips, gasket exterior, and the interior surface of both coupling housings (silicone spray is not a compatible lubricant).

3. POSITION GASKET: Position the gasket over the prepared pipe end. Verify that no portion of the gasket overhangs the prepared pipe end.

4. JOIN PREPARED PIPE ENDS: Align and bring the two prepared pipe ends to within the appropriate pipe end separation dimension. Slide the gasket into position and center it between the groove in each prepared pipe end. Verify that the gasket does not extend into the groove of either prepared pipe end at any point throughout the installation. **The gasket shall fit snug to the prepared pipe ends. Gaps/sags shall not be present between the gasket sealing lips and outside diameter of the prepared pipe ends.**



5. LUBRICATE BOLT THREADS: At the time of hardware installation, apply a thin coat of Victaulic Lubricant or equivalent bolt thread lubricant to the bolt threads, as indicated above. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads in the same manner indicated above.

⚠ CAUTION

- **Verify that the gasket does not become rolled or pinched while installing the housings.**

Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.

6a. INSTALL HOUSINGS: Install the housings over the gasket. Verify that the housings' keys completely engage the groove in each prepared pipe end. Maintain support of the housings while preparing to install the lubricated bolts and nuts.

6b. INSTALL BOLTS/NUTS: Install the lubricated bolts, and thread a nut onto each bolt. **NOTE:** Verify that the oval neck of each bolt seats properly in the bolt hole.

7. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides, maintaining nearly uniform bolt pad gaps during tightening. **Continue to tighten the nuts evenly by alternating sides until metal-to-metal bolt pad contact AND the specified torque value are achieved.** Refer to the applicable "Required Torque" and "Helpful Information" tables on the following page. **NOTE:** It is important to tighten the nuts evenly by alternating sides to prevent gasket pinching. Deep-well sockets are required for proper installation due to the longer bolt lengths associated with these couplings.

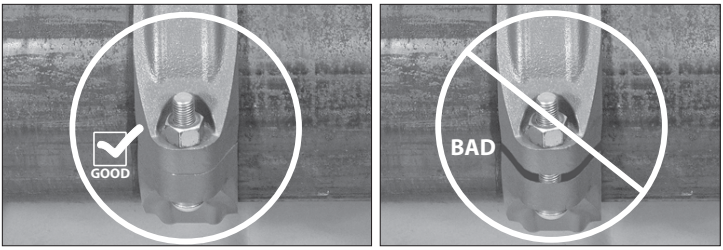
TO PREVENT LUBRICATION FROM DRYING OUT AND CAUSING GASKET PINCHING, ALWAYS BRING THE BOLT PADS INTO METAL-TO-METAL CONTACT IMMEDIATELY AFTER ASSEMBLING THE COUPLING ONTO THE PREPARED PIPE ENDS.

⚠ WARNING

- **Nuts shall be tightened evenly by alternating sides, maintaining nearly uniform bolt pad gaps, until both conditions of metal-to-metal bolt pad contact AND the specified torque value are achieved.**
- **Always bring the bolt pads into metal-to-metal contact immediately after assembling the coupling onto prepared pipe ends.**
- **Keep hands away from coupling openings during tightening.**

Failure to follow instructions for tightening coupling hardware could result in:

- **Excessive bolt torque required to assemble the joint (incomplete assembly)**
- **Bolt damage or fracture**
- **Joint leakage and property damage**
- **A negative impact on system integrity**
- **Personal injury or death**



8. Visually inspect the bolt pads at each joint to verify that metal-to-metal contact is achieved across the entire bolt pad section, in accordance with step 7 on the previous page.

Style W07/LW07 and W77 Required Torque

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Torque
14 – 18 DN350 – DN450	14.000 – 18.000 355.6 – 457.2	250 ft-lbs 340 N•m
	14.843 – 24.803 377.0 – 630.0	250 ft-lbs 340 N•m
20 – 24 DN500 – DN600	20.000 – 24.000 508.0 – 609.6	375 ft-lbs 500 N•m

Style W07/LW07 and W77 Helpful Information

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Number of Bolts/Nuts	Nut Size inches/Metric	Socket Size inches/mm
14 – 18 DN350 – DN450	14.000 – 18.000 355.6 – 457.2	2	1 M24	1 5/8 41
	14.843 – 24.803 377.0 – 630.0	2	1 M24	1 5/8 41
20 – 24 DN500 – DN600	20.000 – 24.000 508.0 – 609.6	2	1 1/8 M27	1 13/16 46

Style W89 Required Torque

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Torque
14 – 24 DN350 – DN600	14.000 – 24.000 355.6 – 609.6	375 ft-lbs 500 N•m

Style W89 Helpful Information

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Number of Bolts/Nuts	Nut Size inches/Metric	Socket Size inches/mm
14 – 24 DN350 – DN600	14.000 – 24.000 355.6 – 609.6	2	1 1/8 M27	1 13/16 46

Style W07 - Rigid Coupling (26 – 50-inch/DN650 – DN1250 Sizes)
Style W77 - Flexible Coupling (26 – 50-inch/DN650 – DN1250 Sizes)

⚠ WARNING

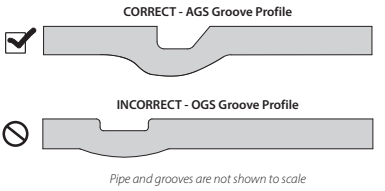
- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **These installation instructions are intended for an experienced, trained installer. The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **Wear safety glasses, hardhat, and foot protection.**

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

NOTICE

- **The following installation steps feature photos of a Style W07 AGS Rigid Coupling on AGS direct-grooved pipe. Note that the same steps apply to installation of Style W77 AGS Flexible Couplings on AGS direct-grooved pipe and installation of Style W07 and W77 Couplings on pipe prepared with AGS *Vic-Rings*.**

⚠ WARNING



Pipe and grooves are not shown to scale

- **DO NOT attempt to assemble Style W07 or Style W77 AGS Couplings on pipe that is direct-grooved with OGS roll sets.**
- **Due to the weight of the coupling housings, mechanical lifting equipment shall be used. Lifting lugs are provided on the coupling housings to aid in assembly.**

Failure to follow these instructions will cause improper assembly and joint failure, resulting in death or serious personal injury and property damage.

STYLE W07 AND W77 COUPLINGS HAVE A TORQUE REQUIREMENT. REFER TO THE INSTRUCTIONS ON THE FOLLOWING PAGES OR THE MARKINGS ON THE HOUSINGS FOR THE TORQUE REQUIREMENT.

1. PREPARE PIPE: Prepare the pipe by following the appropriate "Pipe End Inspection and Preparation" section on pages 2 – 4 in this handbook. **Support both pipe lengths securely. Pipe support shall be maintained throughout the entire installation procedure.**

⚠ CAUTION

- **A thin coat of a compatible lubricant shall be applied to the gasket sealing lips, gasket exterior, and the interior surface of each coupling housing to help prevent the gasket from pinching, rolling, or tearing during installation.**

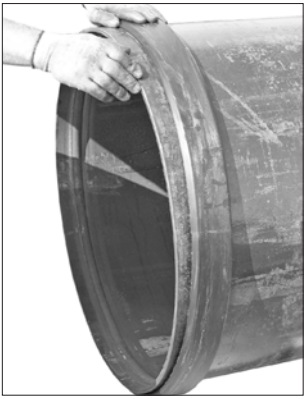
Failure to use a compatible lubricant may cause gasket damage, resulting in joint leakage and property damage.

2a. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. **For complete compatibility information, reference Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com.**

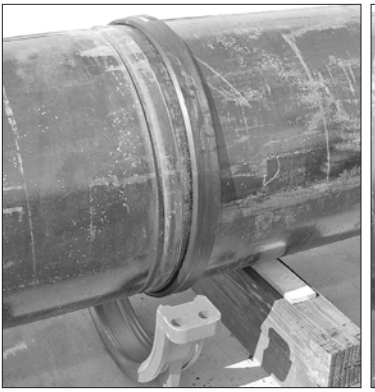
2b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, Victaulic Lubricant or silicone grease, to the gasket sealing lips, gasket exterior, and the interior surface of both coupling housings (silicone spray is not a compatible lubricant).

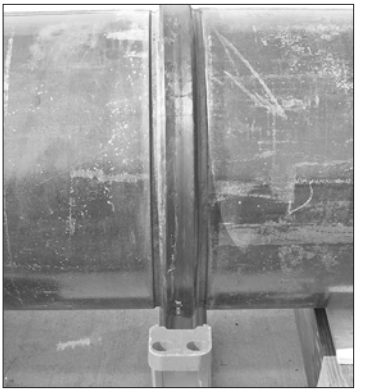
NOTICE

- **When the gasket is positioned over the prepared pipe end, the gasket sealing lips shall maintain full circumferential contact with the pipe.**
- **The gasket shall fit snug to the prepared pipe end. Gaps/sags shall not be present between the gasket sealing lips and outside diameter of the prepared pipe end.**
- **A gasket that does not fit snug to the outside diameter of the prepared pipe end shall be replaced with a new gasket prior to installation of the coupling housings.**



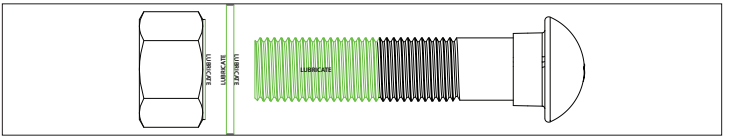
3. POSITION GASKET: Position the gasket over the prepared pipe end. Verify that no portion of the gasket overhangs the prepared pipe end.





4a. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Move the lower segment assembly into position underneath the prepared pipe ends.

4b. JOIN PREPARED PIPE ENDS: Align and bring the two prepared pipe ends to within the appropriate pipe end separation dimension. Slide the gasket into position and center it between the groove in each prepared pipe end. Verify that the gasket does not extend into the groove of either prepared pipe end at any point throughout the installation. **The gasket shall fit snug to the prepared pipe ends. Gaps/sags shall not be present between the gasket sealing lips and outside diameter of the prepared pipe ends.**

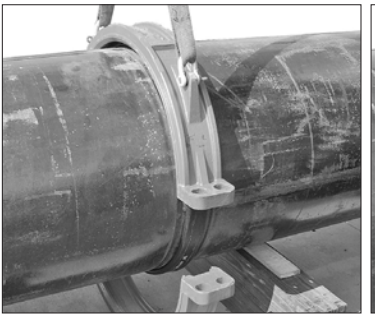


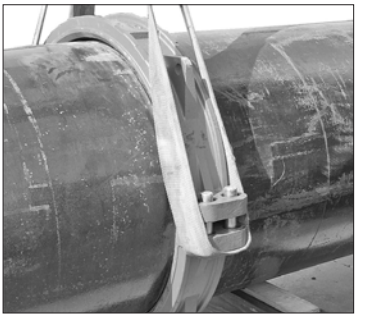
5. LUBRICATE BOLT THREADS: At the time of hardware installation, apply a thin coat of Victaulic Lubricant or equivalent bolt thread lubricant to the bolt threads, as indicated above. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads in the same manner indicated above.

⚠CAUTION

- **Verify that the gasket does not become rolled or pinched while installing the housings.**

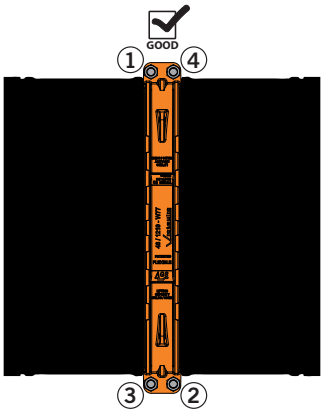
Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.





6. INSTALL HOUSINGS: Using a strapping method, similar to the examples shown above with a lubricated bolt installed in each bolt hole, install the housings over the gasket. Verify that the housings' keys completely engage the groove in each prepared pipe end. Maintain support of the housings while preparing to install the flat washers and nuts.

7. INSTALL FLAT WASHERS/NUTS: Install a flat washer onto the end of each bolt, and thread a nut onto each bolt. **NOTE:** Verify that the oval neck of each bolt seats properly in the bolt hole.



REPEAT THE TIGHTENING SEQUENCE SHOWN ABOVE UNTIL THE INSTALLATION REQUIREMENTS IN STEP 8 BELOW ARE ACHIEVED.

8. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides, maintaining nearly uniform bolt pad gaps during tightening (refer to tightening sequence shown above). **Continue to tighten the nuts evenly by alternating sides until metal-to-metal bolt pad contact AND the specified torque value are achieved.** Refer to the "Required Torque" and "Helpful Information" tables on the following page. **NOTE:** It is important to tighten the nuts evenly by alternating sides to prevent gasket pinching. Deep-well sockets are required for proper installation due to the longer bolt lengths associated with these couplings.

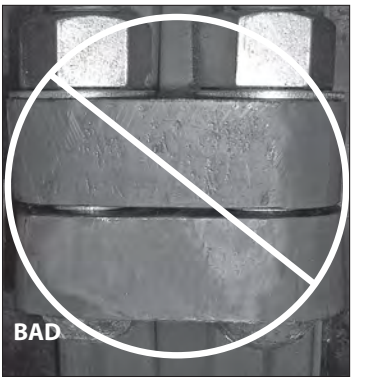
TO PREVENT LUBRICATION FROM DRYING OUT AND CAUSING GASKET PINCHING, ALWAYS BRING THE BOLT PADS INTO METAL-TO-METAL CONTACT IMMEDIATELY AFTER ASSEMBLING THE COUPLING ONTO PREPARED PIPE ENDS.

⚠ WARNING

- **Nuts shall be tightened evenly by alternating sides, maintaining nearly uniform bolt pad gaps, until both conditions of metal-to-metal bolt pad contact AND the specified torque value are achieved.**
- **Always bring the bolt pads into metal-to-metal contact immediately after assembling the coupling onto prepared pipe ends.**
- **Keep hands away from coupling openings during tightening.**

Failure to follow instructions for tightening coupling hardware could result in:

- **Excessive bolt torque required to assemble the joint (incomplete assembly)**
- **Bolt damage or fracture**
- **Joint leakage and property damage**
- **A negative impact on system integrity**
- **Personal injury or death**



9. Visually inspect the bolt pads at each joint to verify that metal-to-metal contact is achieved across the entire bolt pad section, in accordance with step 8 on the previous page.

Required Torque

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Torque
26 – 28 DN650 – DN700	26.000 – 28.000 660.4 – 711.2	375 ft-lbs 500 N•m
30 – 38 DN750 – DN950	30.000 – 38.000 762.0 – 965.0	500 ft-lbs 678 N•m
40 – 60 DN1000 – DN1500	40.000 – 60.000 1016.0 – 1524.0	600 ft-lbs 814 N•m

Helpful Information

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Number of Bolts/Nuts/ Washers	Nut Size inches/Metric	Socket Size inches/mm
26 – 28 DN650 – DN700	26.000 – 28.000 660.4 – 711.2	4	1 ⅛ M27	1 13/16 46
30 – 38 DN750 – DN950	30.000 – 38.000 762.0 – 965.0	4	1 ¼ M30	2 50
40 – 60 DN1000 – DN1500	40.000 – 60.000 1016.0 – 1524.0	4	1 ½ M36	2 ⅜ 60

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **These installation instructions are intended for an experienced, trained installer. The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **Wear safety glasses, hardhat, and foot protection.**

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

NOTICE

- **The following installation steps feature images of a 66-inch/DN1650 Style W77B AGS Flexible Coupling on AGS direct-grooved pipe. Note that the same steps apply to installation of 78-inch/DN1950 and larger sizes of Style W77B AGS Flexible Couplings on pipe prepared with AGS *Vic-Rings*.**
- **Style W77B Couplings in 52 – 88-inch/DN1300 – DN2200 sizes are cast in four segments for ease of handling.**
- **Style W77B Couplings in 90-inch/DN2250 and larger sizes are cast in six segments for ease of handling.**

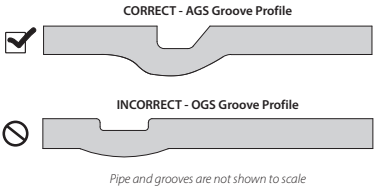
FOR STYLE W77B COUPLINGS IN 52 – 72-INCH/DN1300 – DN1800 SIZES:

- **Style W77B Couplings in 52 – 72-inch/DN1300 – DN1800 sizes are designed to be installed on AGS direct-grooved pipe OR on pipe prepared with AGS *Vic-Rings*.**

FOR STYLE W77B COUPLINGS IN 78-INCH/DN1950 AND LARGER SIZES:

- **Style W77B Couplings in 78-inch/DN1950 and larger sizes are designed to be installed ONLY on pipe prepared with AGS *Vic-Rings*.**

⚠ WARNING

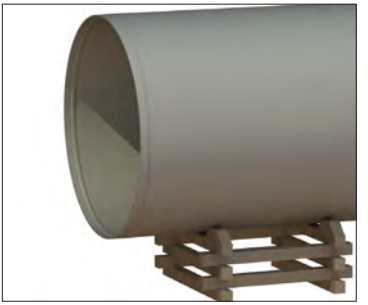


Pipe and grooves are not shown to scale

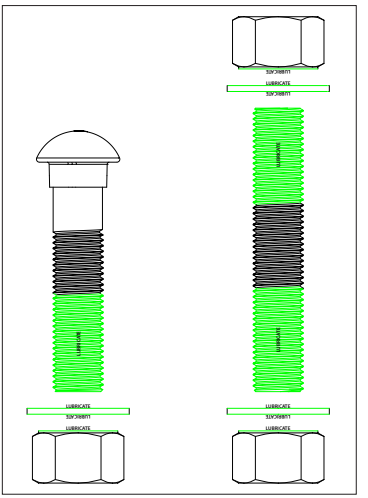
- **DO NOT attempt to assemble Style W77B Couplings on pipe that is direct-grooved with OGS roll sets.**
- **Due to the weight of the coupling housings, mechanical lifting equipment shall be used. Lifting lugs are provided on the coupling housings to aid in assembly.**

Failure to follow these instructions will cause improper assembly and joint failure, resulting in death or serious personal injury and property damage.

STYLE W77B COUPLINGS HAVE A TORQUE REQUIREMENT. REFER TO THE INSTRUCTIONS ON THE FOLLOWING PAGES OR THE MARKINGS ON THE HOUSINGS FOR THE TORQUE REQUIREMENT.



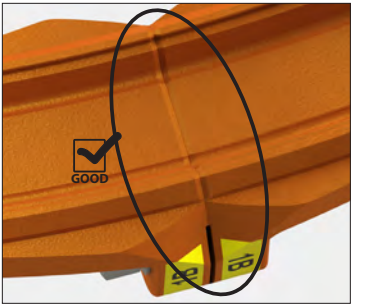
1. PREPARE PIPE: Prepare the pipe by following the appropriate "Pipe End Inspection and Preparation" section on pages 2 – 4 in this handbook. **Support both pipe lengths securely. Pipe support shall be maintained throughout the entire installation procedure.**



2. At the time of hardware installation, apply a thin coat of Victaulic Lubricant or equivalent bolt thread lubricant to the bolt or stud threads, as indicated to the left. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt or stud threads in the same manner indicated to the left.

NOTICE

- **The housings are marked with a number/letter and color combination on each bolt pad. During installation, the housings' bolt pads shall be mated so that the number/letter and color combinations are matched.**

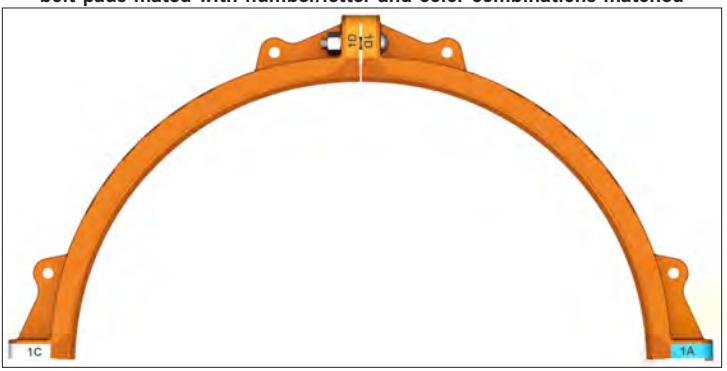


3. ASSEMBLE SEGMENTS: Assemble segments into two equal halves. During assembly, verify that the housings' keys are in alignment before tightening hardware (refer to images above for examples of proper and improper alignment).

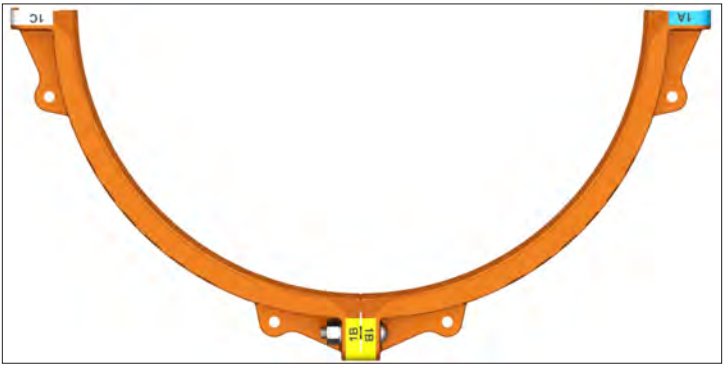
FOR COUPLINGS SUPPLIED WITH OVAL NECK TRACK BOLTS: Install a lubricated bolt into each hole location at the bolt pads. Install a lubricated flat washer onto the end of each bolt, and thread a lubricated nut onto each bolt. Verify that the oval neck of each bolt seats properly in the bolt hole. Tighten the nuts until metal-to-metal contact occurs at the bolt pads. **NOTE: For the segment assembly that will be installed on top of the piping, back the nuts off a full turn to provide spacing between the bolt pads, making a loosened segment assembly.**

FOR COUPLINGS SUPPLIED WITH STUDS: Insert a lubricated stud into each hole location at the bolt pads. Install a lubricated flat washer onto the ends of each stud, and thread a lubricated nut onto the ends of each stud. Tighten the nuts until metal-to-metal contact occurs at the bolt pads. **NOTE: For the segment assembly that will be installed on top of the piping, back the nuts off a full turn to provide spacing between the bolt pads, making a loosened segment assembly (for 90-inch/DN2250 and larger sizes, verify that the nuts are backed off a full turn at both bolt pad locations).**

Upper segment assembly shown below with nuts backed off a full turn and bolt pads mated with number/letter and color combinations matched



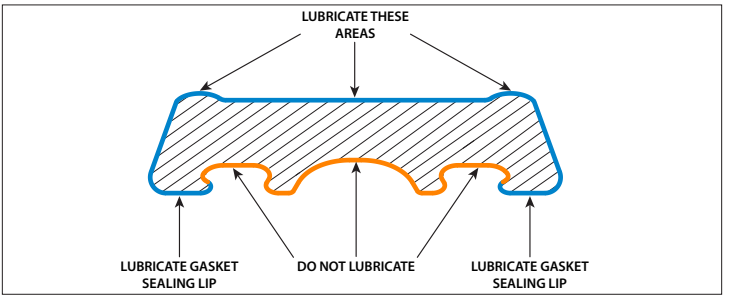
Bottom segment assembly shown below with metal-to-metal contact at bolt pads and bolt pads mated with number/letter and color combinations matched

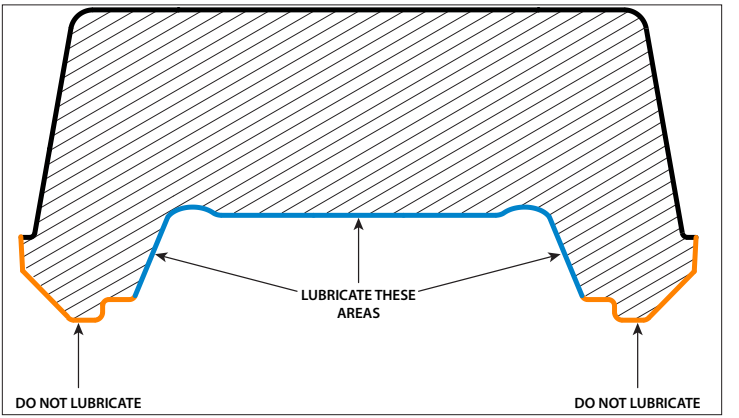


⚠ CAUTION

- **A thin coat of a compatible lubricant shall be applied to the gasket sealing lips, gasket exterior, and the interior surface of each coupling housing to help prevent the gasket from pinching, rolling, or tearing during installation.**

Failure to use a compatible lubricant may cause gasket damage, resulting in joint leakage and property damage.

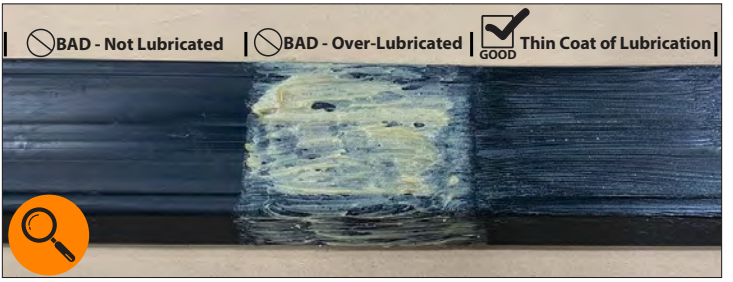




Gasket and Housing Cross Sections are Exaggerated for Clarity

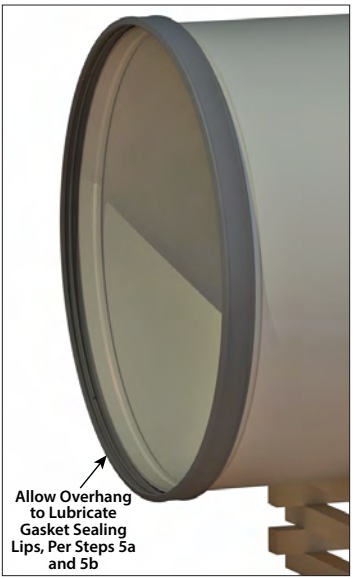
4a. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. **For complete compatibility information, reference Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com.**

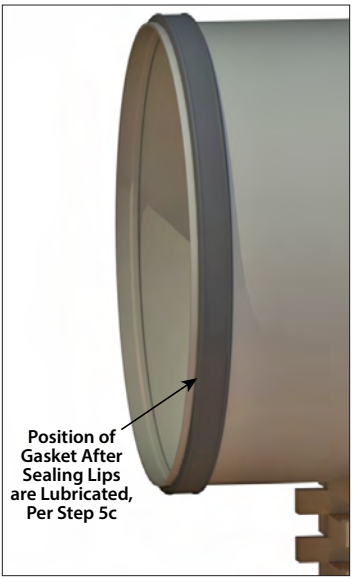
4b. REFER TO IMAGES ABOVE FOR AREAS OF THE GASKET AND COUPLING HOUSINGS THAT REQUIRE LUBRICATION: Reference each individual step on the following pages for details regarding when to apply lubrication to individual components. Depending on site conditions, lubrication steps may be altered to prevent dirt and debris from accumulating on components and/or becoming trapped in lubricant. A thin coat of a compatible lubricant, Victaulic Lubricant or silicone grease, is required for the areas of the gasket and coupling housings noted above (silicone spray is not a compatible lubricant).



NOTICE

- **When the gasket is positioned over the prepared pipe end, the gasket sealing lips shall maintain full circumferential contact. The gasket shall fit snug to the prepared pipe end. Gaps/sags shall not be present between the gasket sealing lips and outside diameter of the prepared pipe end.**
- **In warmer climates, if the gasket is left exposed on the prepared pipe end for an extended period of time, the gasket may expand and sag. Installation shall not continue if a sag is present. The gasket shall be removed and placed in a controlled environment for reuse at a later time.**
- **A gasket that does not fit snug to the outside diameter of the prepared pipe end shall be replaced with a new gasket prior to installation of the coupling housings.**





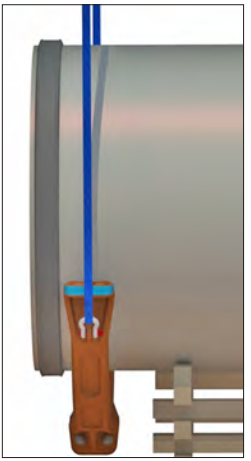
5a. FOR EASE OF LUBRICATION, HANG GASKET FROM PREPARED PIPE END: Lubricate the exposed gasket sealing lip with a compatible lubricant (refer to steps 4a and 4b on the previous page). Prevent the gasket from contacting dirt and debris.

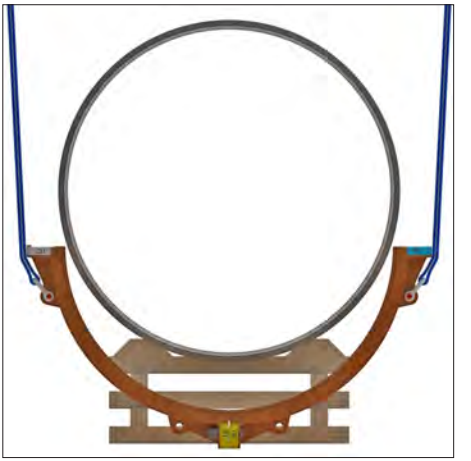
5b. RE-POSITION GASKET ON PREPARED PIPE END TO EXPOSE OPPOSITE GASKET SEALING LIP: Lubricate the exposed gasket sealing lip with a compatible lubricant (refer to steps 4a and 4b on the previous page). Prevent the gasket from contacting dirt and debris.

5c. POSITION GASKET COMPLETELY OVER PREPARED PIPE END: After both sealing lips are lubricated, position the gasket completely over the prepared pipe end. Verify that no portion of the gasket overhangs the prepared pipe end.

NOTICE

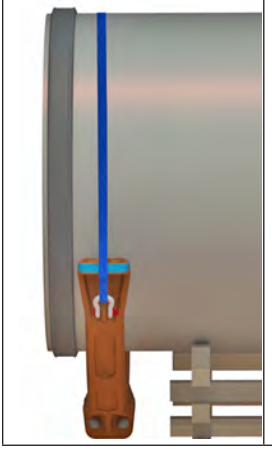
- **Verify that the position of the lower segment assembly is low enough to clear the gasket during final assembly, as shown below.**



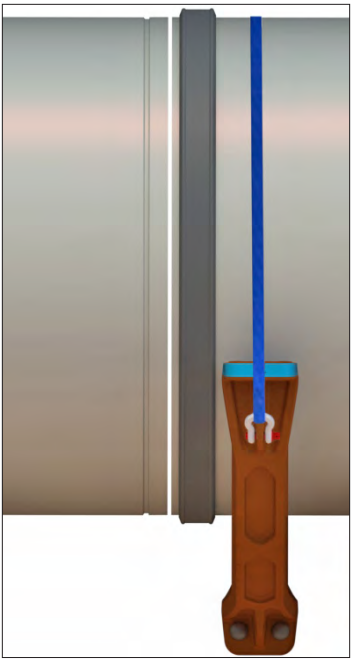


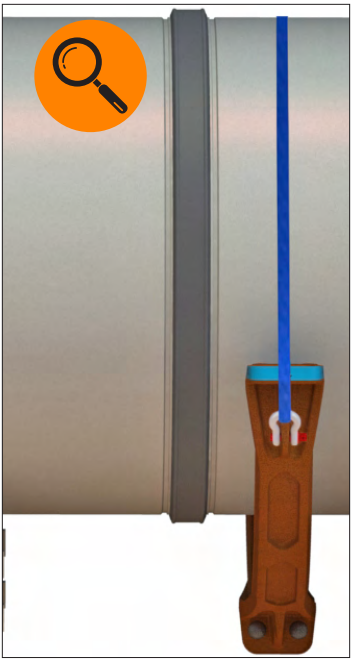
5d. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method similar to what is shown to the left, move the lower, fully-tightened segment assembly into position underneath the prepared pipe end.

NOTICE



- **Upon removal of the lifting straps, verify that the lower segment assembly is properly blocked or braced to prevent the assembly from falling over. This can be accomplished by temporarily routing a strap from one bolt pad or lifting lug up and over the pipe segment to the other bolt pad or lifting lug.**





6a. JOIN PREPARED PIPE ENDS: Align and bring the two prepared pipe ends to within the appropriate pipe end separation dimension. Slide the gasket into position and center it between the groove in each prepared pipe end. Verify that the gasket does not extend into the groove of either prepared pipe end at any point throughout the installation. **The gasket shall fit snug to the prepared pipe ends. Gaps/sags shall not be present between the gasket sealing lips and outside diameter of the prepared pipe ends.**

6b. LUBRICATE REMAINING AREAS OF GASKET: Verify that a thin, even coat is applied to all required gasket surfaces (refer to step 4b on page 52 and steps 5a and 5b on page 53).

NOTICE

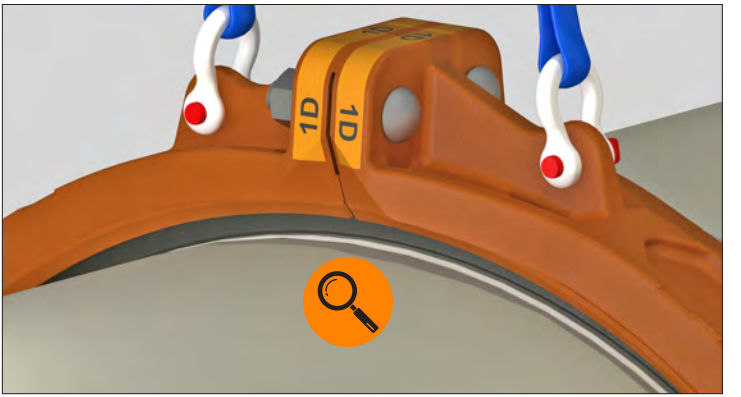
- **If internal access to the piping is possible, check for gasket centering at the pipe gap. Follow all jobsite requirements for working safely in confined spaces.**
- **If the gasket contains a white centerline, verify that the centerline is located between the prepared pipe ends around the entire circumference.**

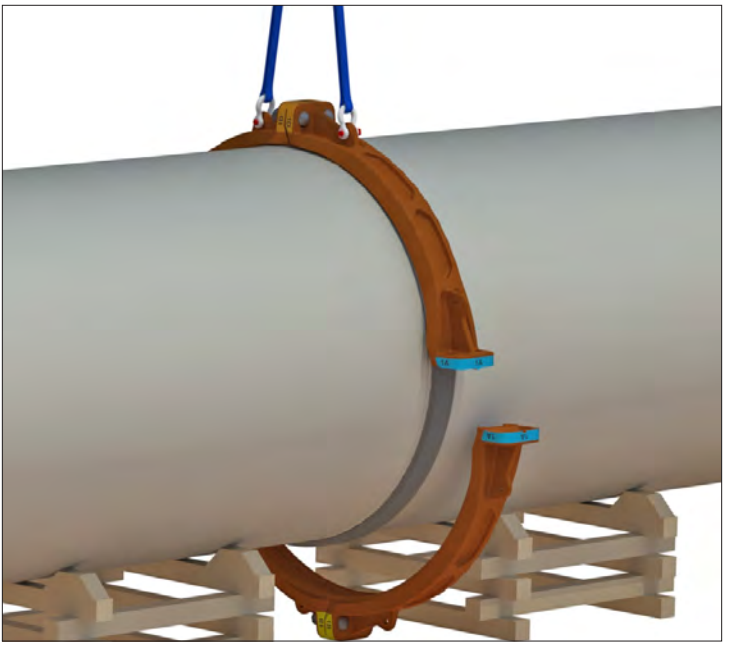
⚠ CAUTION

- **Verify that the gasket does not become rolled or pinched while installing the housings.**

Failure to follow this instruction could cause damage to the gasket, resulting in joint leakage.

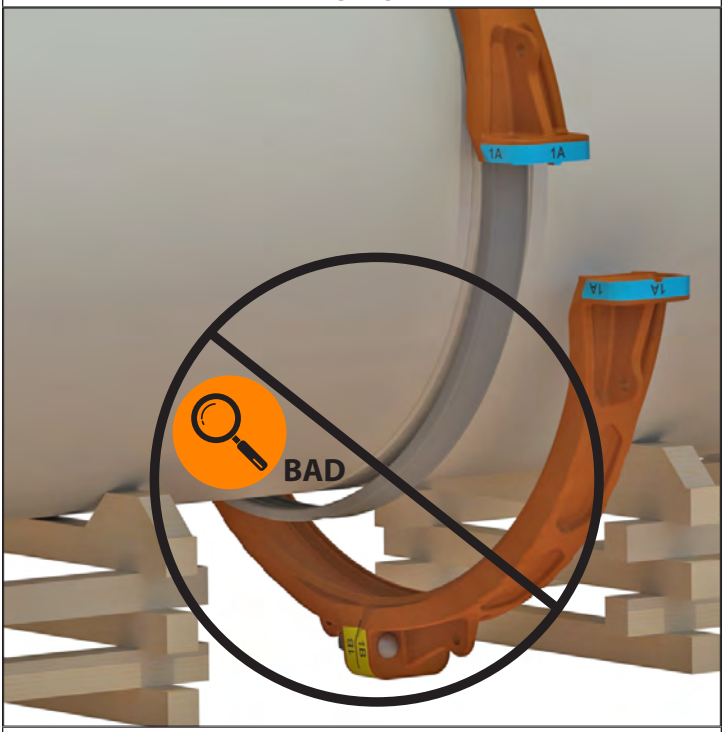
7a. LUBRICATE UPPER SEGMENT ASSEMBLY: Apply a thin coating of a compatible lubricant to the interior surfaces of the upper segment assembly (refer to step 4b on page 52).





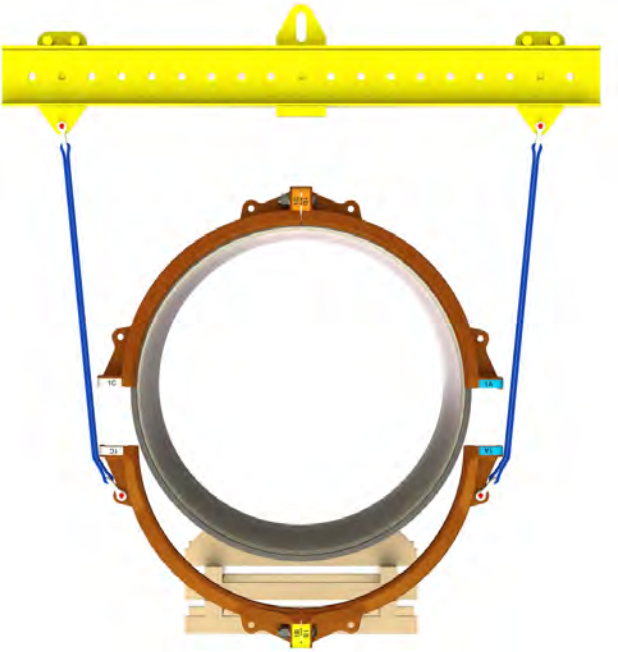
7b. INSTALL UPPER, LOOSENED SEGMENT ASSEMBLY: Using a strapping method similar to what is shown above, install the upper, loosened segment assembly over the gasket. When the upper, loosened segment assembly is approximately 1 – 2 inches/ 25 – 51 mm from being completely lowered, verify that the gasket remains centered and that the housings' keys maintain alignment with the groove of each prepared pipe end.

NOTICE

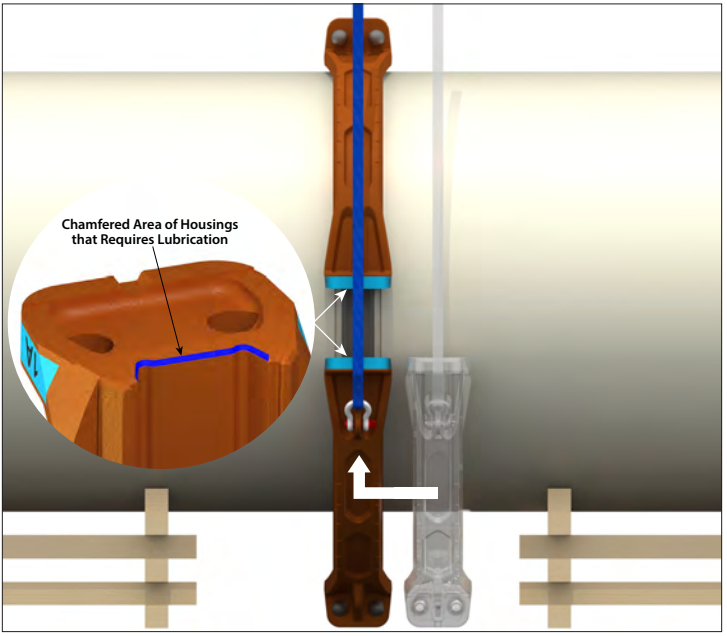


- **If installation of the upper segment assembly causes the gasket to sag, verify that the gasket's exterior and housings' interiors have been lubricated properly.**
- **In addition, the bolt pad locations at the spring-line of the pipe (3 & 9 o'clock positions) may be pulled open after placement of the upper segment assembly. Ensure gasket freely moves back into position, resulting in full contact with the bottom of the pipe.**
- **Refer to the "Troubleshooting" section on pages 67 – 68.**

NOTICE

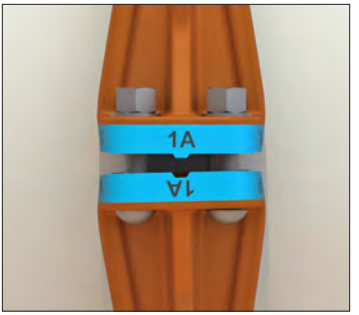


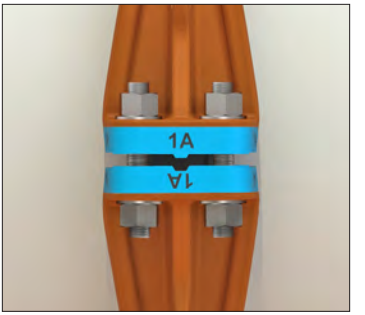
- **To help reduce the chance of gasket pinching, verify that the rigging method, such as use of a spreader bar or lifting beam, provides an outward pull on the lower segment assembly.**
- **If gasket pinching occurs as the lower segment assembly is being raised, the gasket shall be replaced before proceeding any further with installation.**
- **Refer to the "Troubleshooting" section on pages 67 – 68.**



8a. LUBRICATE LOWER SEGMENT ASSEMBLY: Apply a thin coating of a compatible lubricant to the interior surfaces of the lower segment assembly **(refer to step 4b on page 52). In addition, apply a thin coating of a compatible lubricant to the housings' chamfer at the bolt pad mating areas (refer to photo at top of page for details)**.

8b. POSITION AND RAISE THE LOWER SEGMENT ASSEMBLY: Using a spreader bar or equivalent rigging method to facilitate lifting, slide the lower segment assembly into position under the gasket and then raise the assembly into position. Use caution to prevent damage to the gasket when sliding the lower segment assembly into position. When the lower segment assembly is approximately 1 – 2 inches/25 – 51 mm from being completely raised, verify that the gasket remains centered and that the housings' keys maintain alignment with the groove of each prepared pipe end. Maintain support of the housings while preparing to install the remaining sets of hardware.





9a. FOR COUPLINGS SUPPLIED WITH OVAL NECK TRACK BOLTS: Install a lubricated bolt into each hole location at the two remaining bolt pads. Install a lubricated flat washer onto the end of each bolt, and thread a lubricated nut onto each bolt. Verify that the oval neck of each bolt seats properly in the bolt hole. Refer to step 2 on page 50 for lubrication requirements.

9b. FOR COUPLINGS SUPPLIED WITH STUDS: Insert a lubricated stud into each hole location at the two remaining bolt pads. Install a lubricated flat washer onto the ends of each stud, and thread a lubricated nut onto the ends of each stud. Refer to step 2 on page 50 for lubrication requirements.

NOTICE

FOR COUPLINGS SUPPLIED WITH STUDS:

- **It is important to maintain roughly the same amount of threads exposed at each nut. Refer to the image on page 66 for examples of proper and improper thread engagement.**

Top View Shown

Top View Shown

10a. START WITH TIGHTENING HARDWARE AT THE HORIZONTAL BOLT PAD LOCATIONS: Starting at the horizontal bolt pad locations where the hardware was just installed in the previous step, tighten the nuts evenly by alternating between the two horizontal bolt pad locations until a ¼ – ½-inch gap is present between the bolt pads.

10b. CONTINUE WITH TIGHTENING AND APPLYING TORQUE TO HARDWARE AT ALL NON-HORIZONTAL BOLT PAD LOCATIONS: Continue by tightening the hardware at non-horizontal bolt pad locations evenly until metal-to-metal bolt pad contact **AND** the specified torque value are achieved. Refer to the "Required Torque" and "Helpful Information" tables on the following page.

10c. FINISH TIGHTENING AND APPLYING TORQUE TO HARDWARE AT THE HORIZONTAL BOLT PAD LOCATIONS: Finish by tightening the hardware at the horizontal bolt pad locations evenly until metal-to-metal bolt pad contact **AND** the specified torque value are achieved. **If the required torque is reached without metal-to-metal bolt pad contact, refer to the "Troubleshooting" section on pages 67 – 68 or contact Victaulic.** Refer to the "Required Torque" and "Helpful Information" tables below.

NOTE: It is important to tighten all nuts evenly by alternating bolt pad locations to prevent gasket pinching and to prevent the housings from coming out of the groove. Refer to the images on the following pages for details. Deep-well sockets are required for proper installation due to the longer bolt or stud lengths associated with these products.

TO PREVENT LUBRICATION FROM DRYING OUT AND CAUSING GASKET PINCHING, ALWAYS BRING THE BOLT PADS INTO METAL-TO-METAL CONTACT IMMEDIATELY AFTER ASSEMBLING THE COUPLING ONTO PREPARED PIPE ENDS.

⚠ WARNING

- **Nuts shall be tightened evenly by alternating all bolt pad locations, in the sequence listed in these instructions, until both conditions of metal-to-metal bolt pad contact AND the specified torque value are achieved at each bolt pad location.**
- **Always bring the bolt pads into metal-to-metal contact immediately after assembling the coupling onto the prepared pipe ends.**
- **Keep hands away from coupling openings during tightening.**

Failure to follow instructions for tightening coupling hardware could result in:

- **Excessive bolt torque required to assemble the joint (incomplete assembly)**
- **Bolt damage or fracture**
- **Joint leakage and property damage**
- **A negative impact on system integrity**
- **Personal injury or death**

Required Torque

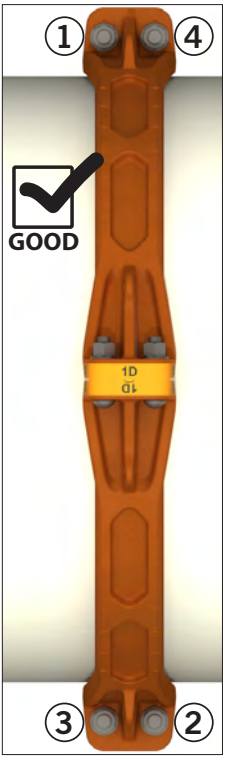
Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Torque*
		Carbon Steel/ Duplex 2507 Hardware
52 – 74 DN1300 – DN1850	52.000 – 74.000 1320.8 – 1879.6	1225 ft-lbs 1661 N•m
78 – 88 DN1950 – DN2200	78.000 – 88.000 1981.2 – 2235.2	2000 ft-lbs 2712 N•m
90 and Larger DN2250 and Larger	90.000 and Larger 2286.0 and Larger	2000 ft-lbs 2712 N•m

*__NOTE:__ Hardware materials that are not listed may require different torques and may affect the pressure rating of the coupling assembly.

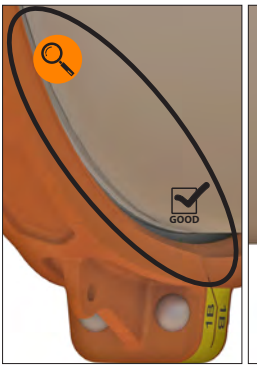
Helpful Information

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	Number of Bolts or Studs	Number of Washers and Nuts	Nut Size inches	Socket Size inches
52 – 74 DN1300 – DN1850	52.000 – 74.000 1320.8 – 1879.6	8 (Studs)	16	1 ½	2 ⅜
78 – 88 DN1950 – DN2200	78.000 – 88.000 1981.2 – 2235.2	8 (Studs)	16	1 ¾	2 ¾
90 and Larger DN2250 and Larger	90.000 and Larger 2286.0 and Larger	12 (Studs)	24	1 ¾	2 ¾

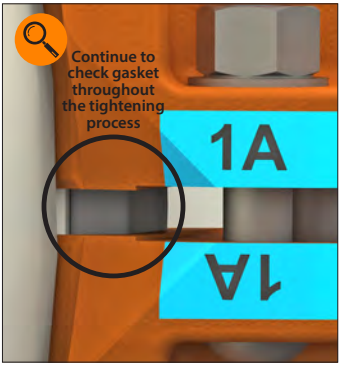
During Tightening, Verify the Following:



Top View Shown

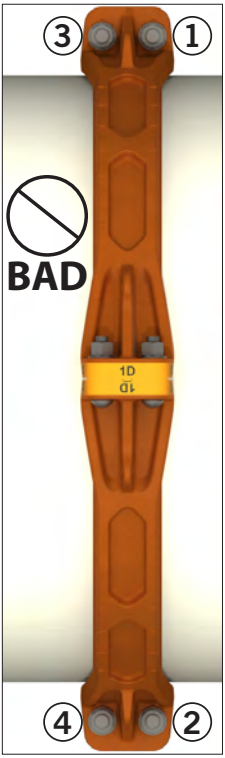


- **Coupling shall remain centered in the groove of each prepared pipe end. This is achieved by tightening the hardware evenly by alternating between bolt pad locations (refer to sequence shown to the left).**

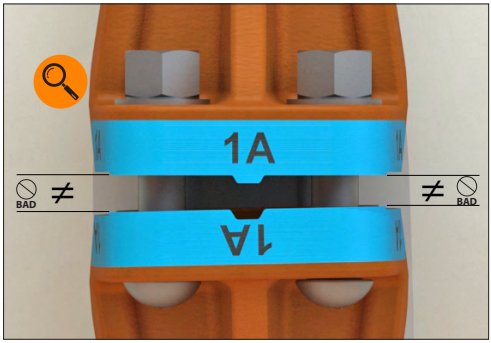


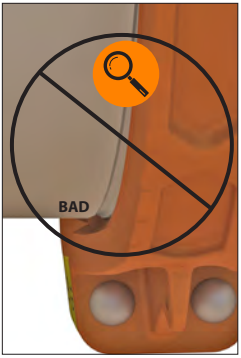
- **Gasket shall remain centered in coupling and between prepared pipe ends.**
- **Gasket shall not become pinched between the bolt pad locations.**

Conditions Caused by Improper Tightening of Hardware:

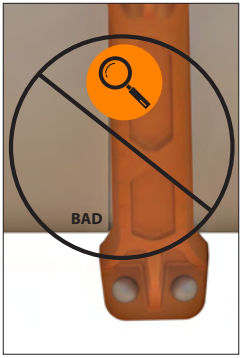


Top View Shown

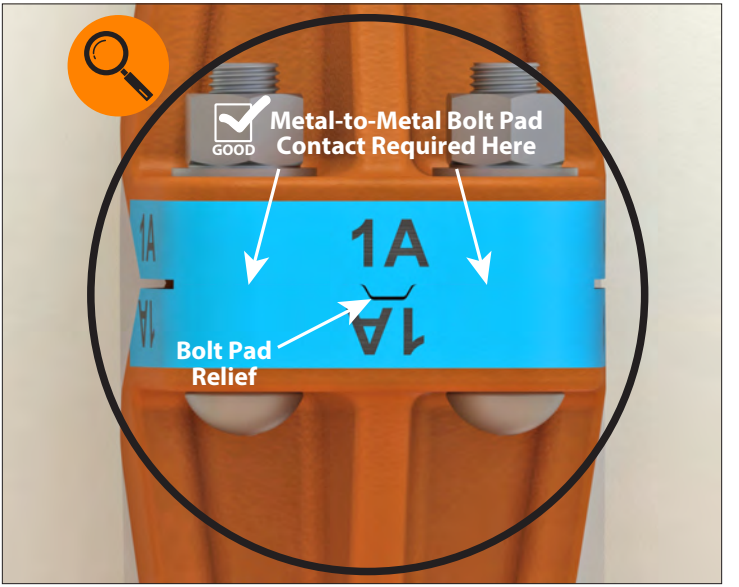


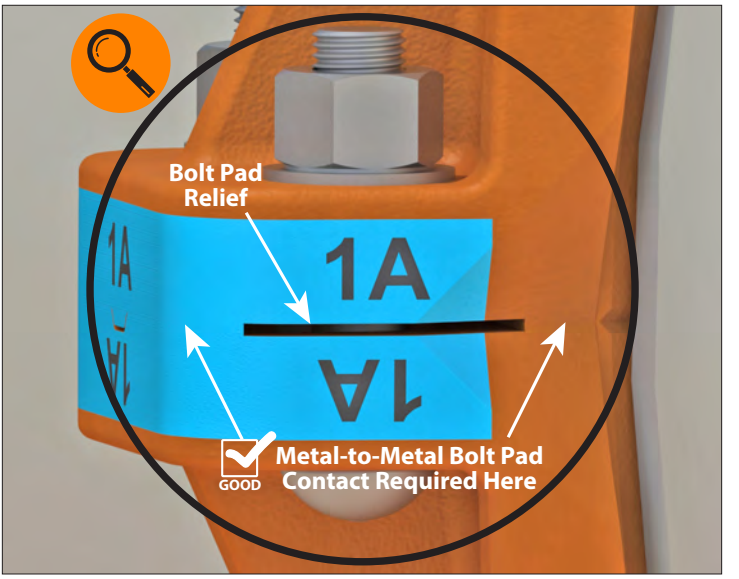


IMPROPER INSTALLATION DUE TO UNEVEN TIGHTENING – COUPLING KEY OUT OF GROOVE

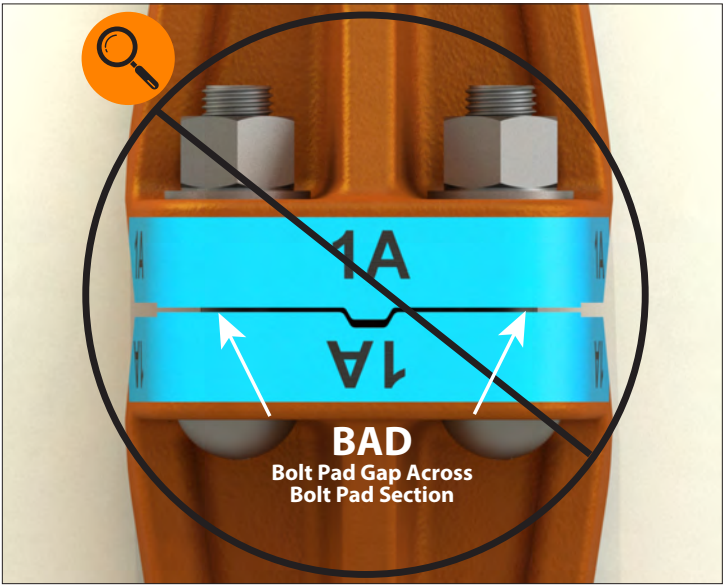


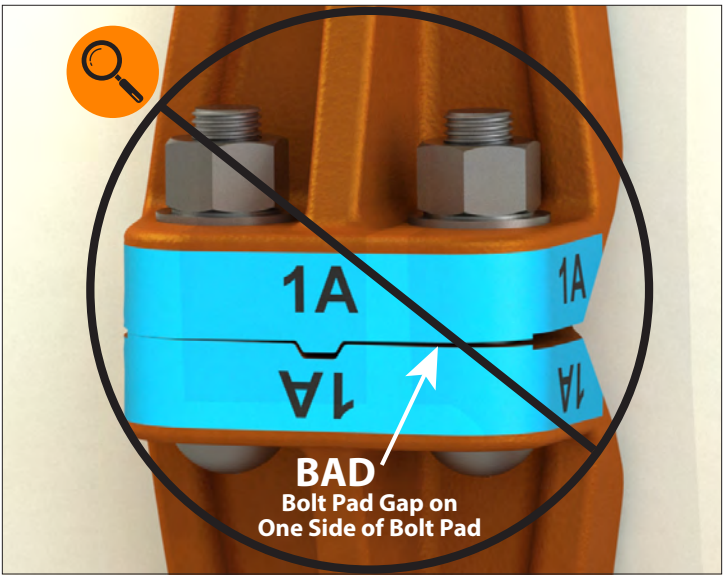
IMPROPER INSTALLATION DUE TO UNEVEN TIGHTENING – COUPLING KEY ON TOP OF PIPE OD

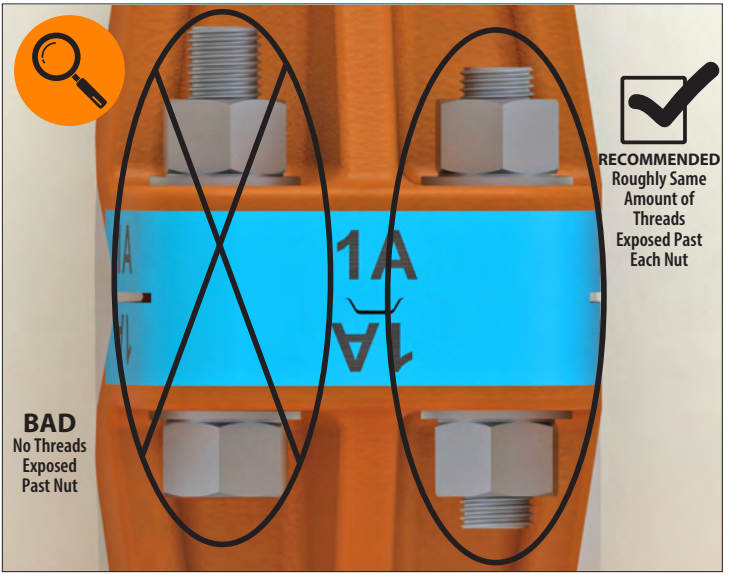




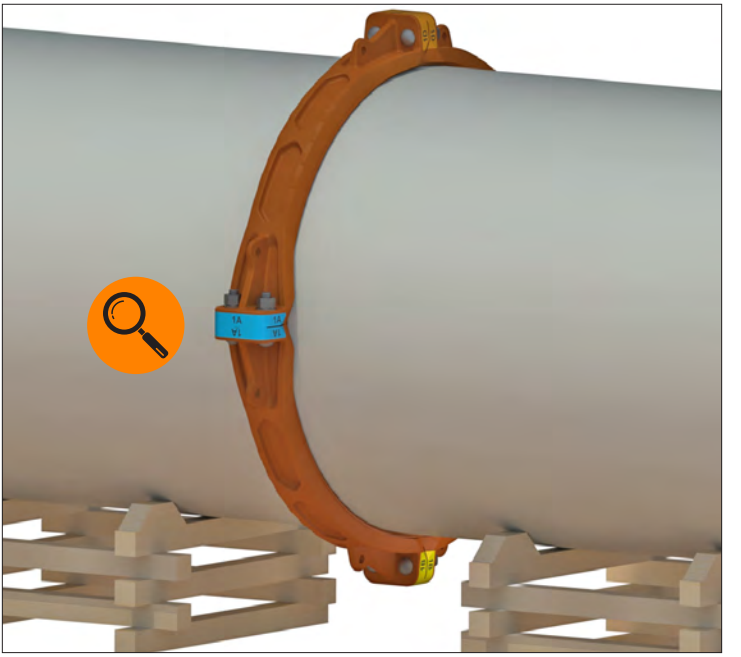
11a. Visually inspect the bolt pads at each joint to verify that metal-to-metal contact is achieved at the areas illustrated above, in accordance with the instructions on pages 60 – 61.


1A
1A
BAD
Bolt Pad Gap Across
Bolt Pad Section


1A
1A
BAD
Bolt Pad Gap on
One Side of Bolt Pad



11b. FOR COUPLINGS SUPPLIED WITH STUDS: Visually inspect each set of hardware to verify roughly the same amount of thread engagement at each nut.



12. Perform a final inspection of each joint and verify that all bolt pads are mated with the number/letter and color combinations matched. In addition, verify that all hardware has been tightened/torqued in accordance with these instructions.

INSTALLATION TROUBLESHOOTING – STYLE W77B

Issue	Cause(s)	Recommended Action(s)
High assembly torque with large bolt pad gap	Housings not in groove Gasket extends into groove Foreign material in groove Severe pipe misalignment	Remove housings Inspect gasket for possible damage and replace, if necessary Inspect groove and clean out any foreign material Follow installation instructions to re-install gasket/ housings (tighten hardware evenly by alternating bolt pad locations) Properly align pipe ends
Bolt pads will not reach metal-to-metal contact	Housings not in groove Gasket extends into groove Pinched gasket Foreign material in groove Housings not matched Severe pipe misalignment Severe flat spots on pipe	Remove housings Inspect gasket for possible damage and replace, if necessary Inspect groove and clean out any foreign material Check bolt pad markings to verify that number/letter and color combinations are matched Follow installation instructions to re-install gasket/ housings (tighten hardware evenly by alternating bolt pad locations) Properly align pipe ends Repair or replace pipe end
Area below coupling key is visible	Flat spot on pipe	Take housings off pipe to inspect pipe ends for deformities and correct pipe condition, if necessary
Coupling leaks upon pressure test	Flat spot on pipe Pipe ovality issues Groove dimensions out of specification Gasket not centered properly between the prepared pipe ends Bolt pads are not in metal-to-metal contact Housings not in groove Housings not matched Foreign material between gasket sealing lip and pipe OD	**⚠ WARNING** **Always verify that the piping system has been completely depressurized and drained immediately prior to removal of any couplings.** Check pipe end and groove measurements Inspect gasket for damage and verify it is centered properly between the prepared pipe ends Check bolt pad markings to verify that number/letter and color combinations are matched Follow installation instructions to re-install gasket/ housings (tighten hardware evenly by alternating bolt pad locations) Clean out any foreign material from between the gasket sealing lip and pipe OD

INSTALLATION TROUBLESHOOTING – STYLE W77B

Issue	Cause(s)	Recommended Action(s)
High assembly torque and then low torque	Coupling was out of groove and then shifted into groove during tightening	Inspect coating/coupling for damage Inspect gasket for pinching if it extends into groove Follow installation instructions to re-install gasket/ housings (tighten hardware evenly by alternating bolt pad locations)
Gasket sags away from bottom of pipe when upper segment assembly is lowered onto pipe	Hardware for upper segment assembly not loosened properly prior to installation Top housing segment assembly not spread Pipe misalignment Insufficient lubrication on gasket OD and coupling housing gasket pocket	Verify that hardware for upper segment assembly is loosened properly per instructions Lift up/out on top segment assembly's bolt pads at the 3 & 9 o'clock positions to allow gasket to relax Properly align pipe ends Follow installation instructions for proper lubricant application
Gasket sags on pipe before housings are installed	Gasket left on pipe for extended period of time in warm climate Incorrect gasket size	Remove gasket and allow to cool Verify gasket size corresponds with coupling size and style
Inspection of gasket from inside of pipe appears to show gasket off center	Gasket was not centered between grooves when housings were installed Segment assemblies were not raised/lowered straight up/ down, which caused the gasket to shift into the groove	Remove housings Inspect gasket for possible damage and replace, if necessary Follow installation instructions to re-install gasket/ housings (tighten hardware evenly by alternating bolt pad locations)
Gasket is bulging at bolt pads during installation	Hardware for upper segment assembly not loosened properly prior to installation Lower segment assembly is raised without the use of a spreader bar, which caused the gasket to bulge at the bolt pads Improper lubrication Lubricant has dried out Pipe misalignment	Verify that hardware for upper segment assembly is loosened per instructions Lift up/out on top segment assembly's bolt pads at the 3 & 9 o'clock positions to allow gasket to relax Follow installation instructions for proper lubricant application Mist dried out lubricant with water and apply additional lubricant, if necessary Properly align pipe ends

Advanced Groove System (AGS) *Vic-Flange* Adapter for AGS Grooved-End Pipe

Installation Instructions

Victaulic®

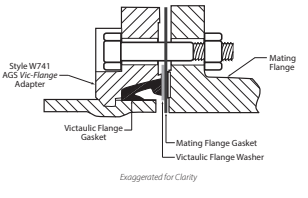
I-W100_69

VICTAULIC FLANGE ADAPTER NOTES FOR 14 – 24-INCH/DN350 – DN600 SIZES OF STYLE W741 AGS *VIC-FLANGE* ADAPTERS

- The Style W741 shall not be used as anchor points for tie rods across non-restrained joints.
- If the Style W741 will be used on more than one outlet of an AGS grooved fitting, verify that there will not be interference between the flanges prior to installation.
- The Style W741 Flange Gasket shall always be assembled with the color-coded lip on the pipe and the other lip facing the mating flange. When installed correctly, the lettering on the Flange Gasket will not be visible when viewing the face of the Style W741 prior to attaching the mating flange.
- Refer to the "Victaulic Flange Washer and Transition Ring Notes" section on the following page for details regarding applications that require a Victaulic Flange Washer or Transition Ring.
- **STANDARD FULL-SHANK DIAMETER ASSEMBLY BOLTS (NOT SUPPLIED) ARE REQUIRED FOR PROPER INSTALLATION OF THE STYLE W741. FULLY-THREADED BOLTS SHALL NOT BE USED.**
- **THE MATING FLANGE SHALL HAVE THE SAME NUMBER OF BOLT HOLES AS THE STYLE W741.**

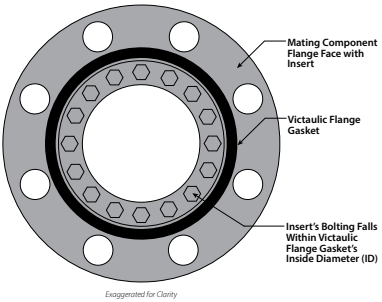
VICTAULIC FLANGE WASHER AND TRANSITION RING NOTES FOR 14 – 24-INCH/DN350 – DN600 SIZES OF STYLE W741 AGS *VIC-FLANGE* ADAPTERS

Style W741 *Vic-Flange* Adapters require a smooth, hard surface at the mating flange face for effective sealing. Some applications, for which the Style W741 is otherwise well suited, do not provide an adequate mating surface. In such cases, a standard metallic Victaulic Flange Washer shall be inserted between the Style W741 and the mating flange to provide the necessary sealing surface. Refer to the example to the right.



Exaggerated for Clarity

- The Style W741 is designed to mate to flanges with a sealing surface roughness conforming to ASME B16.5 requirements, without the use of a Victaulic Flange Washer and mating flange gasket. When mating to flanged components where the sealing surface roughness exceeds ASME B16.5 requirements, a standard metallic Victaulic Flange Washer and appropriate mating flange gasket are recommended.
- When mating a Style W741 to a rubber-faced or partially rubber-faced (smooth or not) piping component, a standard metallic Victaulic Flange Washer shall be placed between the valve and the Style W741.
- When mating a Style W741 to piping components (valves, strainers, etc.) where the component flange face has an insert, perform a trial fit with the Victaulic Flange Gasket to determine if the insert's bolting falls within the Flange Gasket's inside diameter (ID), as shown to the right. If the insert's bolting does not fall within the Flange Gasket's ID, a standard metallic Victaulic Flange Washer and appropriate mating flange gasket are recommended.



Exaggerated for Clarity

- When mating two Style W741 *Vic-Flange* Adapters, the Victaulic Flange Washer shall be placed between the two Victaulic Flange Adapters with the draw bolt locations staggered.
- When mating a Victaulic Style 341 AWWA *Vic-Flange* Adapter to a Style 741 or W741 in 14 – 24-inch/DN350 – DN600 sizes, the Victaulic Flange Transition Ring, rather than a Victaulic Flange Washer, shall be placed between the two Victaulic Flange Adapters with the draw bolt locations staggered. If the AWWA flange is not a Victaulic Style 341 (i.e. flanged valve), an appropriate mating flange gasket shall be placed against the non-Victaulic flanged component. The standard metallic Victaulic Flange Washer shall then be inserted between the mating flange gasket and the Victaulic Flange Gasket, as shown at the top of this page.

NOTICE

- **When a Victaulic flange solution is needed to connect components made from dissimilar metals, the system shall be reviewed for the potential of galvanic corrosion. If warranted, a bolt isolation kit shall be used on the flanged connection, along with a phenolic flange washer (instead of a standard metallic Victaulic Flange Washer).**
- **Always reference the bolt isolation kit manufacturer's installation instructions. A qualified engineer or system designer shall ultimately review and approve any solution for galvanic protection of a system.**

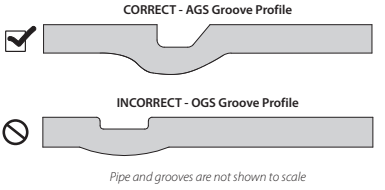
Style W741 - AGS *Vic-Flange* Adapter (ANSI Class 125/150)

⚠ WARNING

- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **These installation instructions are intended for an experienced, trained installer. The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**
- **Wear safety glasses, hardhat, and foot protection.**

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

⚠ WARNING



- **DO NOT attempt to assemble the Style W741 on pipe that is direct-grooved with OGS roll sets.**

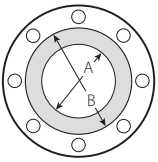
Failure to follow this instruction will cause improper assembly and joint failure, resulting in death or serious personal injury and property damage.

Style W741 AGS *Vic-Flange* Adapters shall be used ONLY with pipe that is prepared to Victaulic AGS groove specifications. **DO NOT** attempt to install these flange adapters on pipe that is prepared to any other groove specification.

1a. CHECK PIPE END: The outside surface of the pipe, between the groove and the pipe end, shall be generally free from indentations, projections, weld seam anomalies, and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, dirt, and cutting particles shall be removed. Always verify that the correct groove profile is being used.

The pipe's outside diameter ("OD"), groove dimensions, and maximum allowable flare diameter shall be within the tolerances listed in this handbook for Victaulic AGS groove specifications.

THE STYLE W741 ASSEMBLY HAS A TORQUE REQUIREMENT. REFER TO THE INSTRUCTIONS ON THE FOLLOWING PAGES OR THE MARKINGS ON THE HOUSINGS FOR THE TORQUE REQUIREMENT.



1b. CHECK MATING FLANGE: The gray area of the mating flange face (shown to the left) shall be generally free from gouges, undulations, and deformities of any type for proper sealing. Refer to the table below for the required flange mating face sealing surface.

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Mating Face Sealing Surface inches/mm	
		"A" Max.	"B" Min.
14 DN350	14.000 355.6	14.00 356	16.00 406
16 DN400	16.000 406.4	16.00 406	18.00 457
18 DN450	18.000 457.2	18.00 457	20.00 508
20 DN500	20.000 508.0	20.00 508	22.00 559
24 DN600	24.000 609.6	24.00 610	26.00 660

NOTICE

- **Verify that there is sufficient clearance behind the groove to permit proper assembly of the Style W741.**
- **Pipe support shall be maintained throughout the entire installation procedure.**

2. INSTALL FIRST SEGMENT: Install the first segment onto the pipe. Verify that the segment's key section completely engages the groove. **NOTE:** On vertical pipe, the first segment shall be supported in place until the second segment is installed and fastened to the first segment. For horizontal pipe, the first segment can be balanced on top of the pipe, as shown to the left.

3. INSTALL SECOND SEGMENT: Install the second segment onto the pipe. Install the provided draw bolts into the Style W741, as shown to the left. Thread a provided nut loosely onto each draw bolt. **NOTE:** The nut should be installed at least flush with the end of the draw bolt but loose enough to permit rotation of the Style W741 for bolt hole alignment in later steps. Verify that the key section of both segments completely engages the groove.

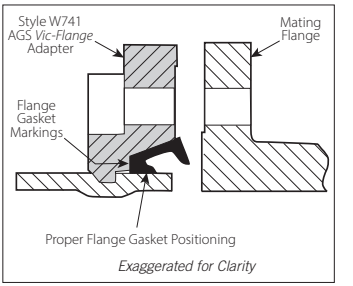
4a. CHECK FLANGE GASKET: Check the Flange Gasket to verify that it is suitable for the intended service. The color code identifies the material grade. **Refer to the "Gasket Color Code Reference" table in this handbook. For complete compatibility information, reference Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com.**

⚠CAUTION

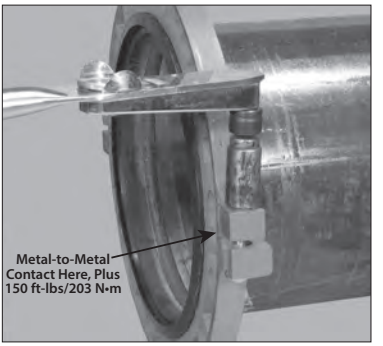
- **A thin coat of a compatible lubricant shall be applied to the Flange Gasket's sealing lips and exterior to help prevent the Flange Gasket from pinching, rolling, or tearing during installation.**
- **DO NOT use excessive lubricant on the Flange Gasket's sealing lips and exterior.**

Failure to use a compatible lubricant may cause Flange Gasket damage, resulting in joint leakage and property damage.

4b. LUBRICATE FLANGE GASKET: Apply a thin coat of a compatible lubricant, Victaulic Lubricant or silicone grease, to the Flange Gasket's sealing lips and exterior (silicone spray is not a compatible lubricant). **NOTE:** This Flange Gasket is designed to provide the sole seal. However, reference shall be made to the notes at the beginning of this section for special applications.



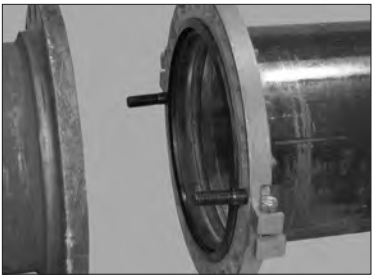
5. POSITION AND INSTALL FLANGE GASKET: Verify that the Flange Gasket is positioned properly, then install the Flange Gasket into the gasket pocket (cavity between the pipe OD and flange recess). The Flange Gasket shall always be assembled with the color-coded lip on the pipe and the other lip facing the mating flange. When installed correctly, the lettering on the Flange Gasket will not be visible when viewing the face of the Style W741.



6. ALIGN W741 AND MATING FLANGE: Rotate the Style W741 on the pipe end, as required, to align the holes with the mating flange.

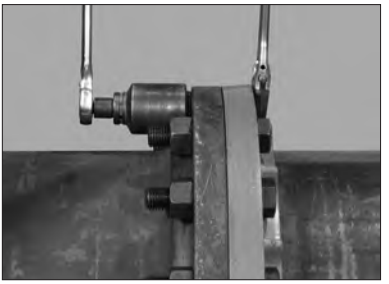
7. TIGHTEN DRAW BOLT NUTS: Tighten the draw bolt nuts evenly by alternating draw bolt locations, maintaining nearly uniform bolt pad gaps during tightening. **Continue to tighten the draw bolt nuts evenly by alternating draw bolt locations until metal-to-metal contact occurs in the area indicated AND a torque of 150 ft-lbs/203 N•m are achieved.**

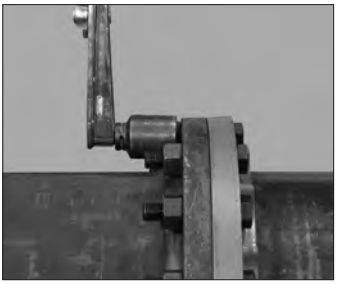
Refer to the "Helpful Information" table on page 76 for the draw bolt/nut sizes and socket sizes. **NOTE:** Deep-well sockets are required for proper installation due to the longer draw bolt lengths associated with the Style W741.

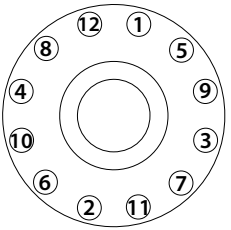


8. INSTALL STANDARD FULL-SHANK-DIAMETER ASSEMBLY BOLTS AT LAP JOINTS: Install a standard full-shank-diameter assembly bolt into each of the lap-joint bolt holes. Refer to the "Helpful Information" table on the following page for the required assembly bolt size and length. **NOTE:** Victaulic does not supply these assembly bolts.

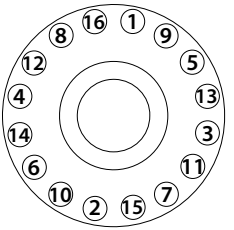
9. JOIN W741 AND MATING FLANGE: Direct the assembly bolts, installed in step 8, into the mating flange holes. Tighten a nut onto each bolt to prevent the bolts from pulling out.



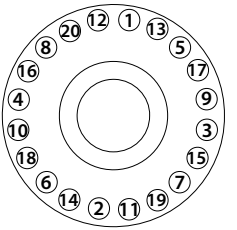




14-inch/DN350 Size



16 – 18-inch/DN400 – DN450 Sizes



20 – 24-inch/DN500 – DN600 Sizes

10a. INSTALL REMAINING STANDARD FULL-SHANK-DIAMETER ASSEMBLY BOLTS/NUTS: Insert a standard full-shank diameter assembly bolt through each remaining hole in the Style W741 and mating flange. Tighten a nut onto each bolt.

10b. TORQUE ALL STANDARD FULL-SHANK-DIAMETER ASSEMBLY BOLTS: Tighten all nuts evenly in the applicable pattern shown above until the required torque value is achieved. Refer to the "Required Torque" table on the following page.

Required Torque

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Required Torque
14 – 16 DN350 – DN400	14.000 – 16.000 355.6 – 406.4	200 – 300 ft-lbs 271 – 407 N•m
18 – 20 DN450 – DN500	18.000 – 20.000 457.2 – 508.0	300 – 400 ft-lbs 407 – 542 N•m
24 DN600	24.000 609.6	400 – 500 ft-lbs 542 – 678 N•m

Helpful Information

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Standard Full-Shank-Diameter Assembly Bolts/Nuts †			Draw Bolts/Nuts §		
		Number of Bolts/ Nuts Required	Bolt/Nut Size x Length inches	Socket Size inches	Number of Bolts/ Nuts Required	Bolt/Nut Size x Length inches	Socket Size inches
14 DN350	14.000 355.6	12	1 x 4 ½	1 ½	2	⅝ x 3 ½	1⁵⁄₁₆
16 DN400	16.000 406.4	16	1 x 4½	1 ½	2	⅝ x 3 ½	1⁵⁄₁₆
18 DN450	18.000 457.2	16	1 ⅛ x 4 ¾	1 ¹¹⁄₁₆	2	¾ x 4 ¼	1 ⅛
20 DN500	20.000 508.0	20	1 ⅛ x 5 ¼	1 ¹¹⁄₁₆	2	¾ x 4 ¼	1 ⅛
24 DN600	24.000 609.6	20	1 ¼ x 5 ¾	1 ⅞	2	¾ x 4 ¼	1 ⅛

† Victaulic does not supply the full-shank-diameter assembly bolts and nuts. Standard full-shank-diameter assembly bolts are required for proper installation of Style W741 AGS *Vic-Flange* Adapters. **Fully-threaded bolts shall not be used.** The assembly bolt sizes listed above are for conventional flange-to-flange connections. Longer bolts are required when the Style W741 is used with wafer-type valves.

§ Draw bolts/nuts are supplied with all Style W741 sizes listed in this table.

No. W60 and LW60 AGS End Caps

VICTAULIC AGS END CAP INSTALLATION SAFETY INSTRUCTIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install, remove, adjust, or maintain the coupling/end cap, any end cap connections, and any other Victaulic piping products.**
- **Always depressurize and drain the piping system completely before attempting to install, remove, adjust, or maintain the coupling/end cap, any end cap connections, and any other Victaulic piping products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of the coupling/end cap, any end cap connections, and any other Victaulic piping products.**
- **Under no circumstances should coupling hardware or any other system component be loosened to check if the system is pressurized or to depressurize the system.**
- **Wear safety glasses, hardhat, and foot protection.**

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

This section provides safety instructions for the installation, use, and removal of Victaulic-manufactured AGS End Caps with Victaulic-manufactured AGS Couplings in all size ranges, along with other important information that is critical for proper use of Victaulic end caps.

Always verify that the Victaulic End Cap being used is designed for the specific groove profile. For example, the Victaulic No. W60 or LW60 End Cap shall be used only with Victaulic AGS products.

When installing, using, or removing a Victaulic end cap, always reference the specific installation instructions for the Victaulic coupling that is being used with the Victaulic end cap. **Contact Victaulic for information regarding No. W60 or LW60 End Caps that can be used as a test cap.**

After installation is complete, always inspect the assembly to verify proper installation:

- A proper assembly occurs when the end cap is seated within the coupling with the correct side facing out. In addition, the coupling's bolt pads shall be in metal-to-metal contact with the required torque value applied, and the oval neck of each bolt shall be seated properly in the bolt hole, as detailed in the applicable product's installation instructions.
- An improper assembly occurs when the incorrect side of the end cap is facing out. In this case, the installer will be unable to tighten the hardware to bring the bolt pads into metal-to-metal contact with the required torque value applied, as detailed in the applicable product's installation instructions. In addition, an improper assembly occurs when the oval neck of a bolt is not seated properly in the bolt hole. **These conditions are not acceptable and shall be corrected before any system pressure testing occurs.**

SAFETY INSTRUCTIONS FOR AGS END CAPS INSTALLED FOR SYSTEM PRESSURE TESTING

- Victaulic end caps that are installed for system pressure testing shall be equipped with a ball valve that can be opened to verify if the system is depressurized.
- Contact Victaulic about ordering a tapped No. W60 or LW60 End Cap that the customer can fit with an appropriately-rated ball valve for the system conditions. A tapped No. W60 or LW60 End Cap with an appropriately-rated ball valve should be used whenever possible for purposes of system pressure testing. **Under no circumstances should coupling hardware or any other system component be loosened to check if the system is pressurized or to depressurize the system.**
- Before system pressure testing, verify that no valves within the tested system (or portion of the system being tested) are closed in order to prevent pressure from being trapped inadvertently.
- Immediately after completing the system pressure test, the system pressure shall be relieved through an appropriate valve.

NOTICE

- **A pressure gauge alone is not an acceptable method of verifying system pressure. Always use a secondary means of verification, such as a second pressure gauge or valve, to confirm that the system is depressurized in accordance with national and local codes and standards for the jobsite.**

Instructions continue on the following page

VICTAULIC AGS END CAP REMOVAL SAFETY INSTRUCTIONS

⚠ WARNING

- **COUPLING/END CAP MAY BE PRESSURIZED.**
- **Always depressurize and drain the piping system completely before attempting to install, remove, adjust, or maintain the coupling/end cap, any end cap connections, and any other Victaulic piping products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of the coupling/end cap, any end cap connections, and any other Victaulic piping products.**
- **Under no circumstances should coupling hardware or any other system component be loosened to check if the system is pressurized or to depressurize the system.**
- **Wear safety glasses, hardhat, and foot protection.**

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

1. Depressurize and drain the piping system completely, and verify that there is no residual pressure.
2. Loosen the nuts of the coupling slowly and, depending on the orientation of the coupling and end cap, be prepared to support the end cap as it releases from the coupling.

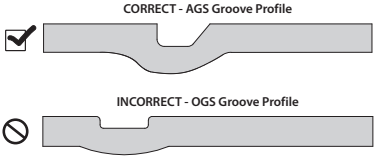
VICTAULIC RECOMMENDS:

- Hydrostatic (water) testing instead of pneumatic (air) testing whenever possible
- Use of a tapped end cap with a pressure-relieving device at each test point location (made-to-order tapped end caps are available for order through Victaulic)
- Removal of pressure immediately after completing a test (follow all applicable national and local codes and standards for the specific jobsite)
- Lockout/tagout procedures approved by the installing contractor
- Following the testing procedures recommended by technical experts, such as those found in the “Guide to Pressure Testing Safety” published by the Mechanical Contractors Association of America, Inc. (MCAA)

AGS Valve Installation Instructions

Butterfly Valves
Check Valves
Gate Valves

⚠ WARNING



Pipe and grooves are not shown to scale

- **The valves listed in this section shall be installed ONLY with AGS Couplings and pipe or fittings that are prepared to Victaulic AGS Specifications.**
- **DO NOT install these valves with pipe or fittings that are prepared to any other groove specification.**
- **DO NOT LOOSEN OR TIGHTEN HARDWARE WHEN A VALVE IS PRESSURIZED.**
- **The system designer is responsible for verifying suitability of mating component materials with the intended fluid media. Valve bodies, discs, and other wetted components shall be compatible with the material flowing through the piping system. Refer to the current Victaulic product publication for the applicable valve, or contact Victaulic for details.**
- **The effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on mating component materials shall be evaluated to confirm system life will be acceptable for the intended service.**

Failure to follow these instructions will cause improper assembly and joint failure, resulting in death or serious personal injury and property damage.

Series W761 AGS Vic-300™ MasterSeal™ Butterfly Valve
Series W719 AGS Butterfly Valve

NOTICE

- **To prevent AGS Butterfly Valves from rotating in the system, Victaulic recommends installing the valve with at least one Victaulic Style W07 AGS Rigid Coupling. If two Victaulic AGS Flexible Couplings are used, additional support may be required to eliminate joint deflection or valve rotation at the coupling connection to the piping system.**

When installing a Victaulic AGS Butterfly Valve into the piping system, follow the instructions in this handbook for the applicable AGS Coupling. **Victaulic AGS Butterfly Valves can be installed in either the horizontal or vertical orientations.**

DO NOT INSTALL BUTTERFLY VALVES INTO THE SYSTEM WITH THE DISC IN THE FULLY-OPEN POSITION. Exposed disc may be damaged and prevent proper function of the valve.

Verify that no part of the disc protrudes beyond the end of the valve body.

- When using Victaulic AGS Butterfly Valves for throttling service, Victaulic recommends positioning the disc no less than 30 degrees open. For best results, the disc should be between 30 and 70 degrees open; this is dependent on the flow requirements/ characteristics for the piping system. High pipeline velocities and/ or throttling with the disc less than 30 degrees open may result in noise, vibration, cavitation, severe gasket erosion/abrasion, and/or loss of control. Contact Victaulic regarding throttling services.
- Victaulic recommends limiting the flow velocities for water service to 20 feet per second/6 meters per second. Contact Victaulic before installing a butterfly valve when higher flow velocities are necessary or specified. When dealing with flow media other than water, contact Victaulic.
- Victaulic recommends good piping practices by installing the butterfly valve five pipe diameters downstream of sources of irregular flow, such as pumps, elbows, and control valves. If not practical due to space constraints, the system should be designed to locate and orient the valve to minimize the impact of dynamic torque on valve life.
- Victaulic AGS Butterfly Valves and connected piping shall be supported properly to prevent the joints from being overloaded. Hanger spacing shall comply with the “Rigid Systems” section of this handbook.
- Welding to Victaulic AGS Butterfly Valves is not permitted and will void the Victaulic warranty.
- When directly connecting a Victaulic AGS End Cap to a Victaulic AGS Butterfly Valve, use only a tapped end cap with a ball valve that can be opened to verify if the system is depressurized. If the butterfly valve is opened and then closed unknowingly while the end cap is attached, the space between the disc and end cap will be filled and pressurized. A sudden release of energy can occur if the end cap is removed while the space behind it is pressurized. **PRESSURE SHALL BE VENTED THROUGH THE END CAP’S BALL VALVE BEFORE ATTEMPTING TO REMOVE THE CAP. NOTE: Due to disc clearance dimensions, an end cap directly connected to a Butterfly Valve may prevent the disc from reaching the fully “OPEN” position.**
- AGS Butterfly Valves CAN be connected directly to flanged components with Style W741 AGS *Vic-Flange* Adapters.
- Refer to the “Check Valve Installation Instructions” in this section for additional requirements.

⚠DANGER

- **When directly connecting a Victaulic AGS End Cap to a Victaulic AGS Butterfly Valve, use only a tapped end cap with a ball valve that can be opened to verify if the system is depressurized.**
- **Pressure shall be vented through the end cap's ball valve before attempting to remove the cap.**

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

ADJUSTING THE TRAVEL LIMIT STOPS FOR SERIES W761 AGS VIC-300™ MASTERSEAL™ BUTTERFLY VALVES WITH GEAR OPERATORS

- Adjustment of the travel limit stops can be performed while the system is operational. **NOTE:** Cycling of the valve to test travel limit stop adjustments may affect downstream equipment. Refer to the instructions on this and the following pages for detailed instructions on how to adjust the travel limit stops.

Adjusting and Setting the "SHUT" Travel Limit Stops of the Gear Operator

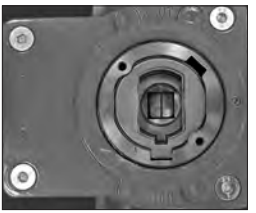
1. Remove the dust cap from the right side of the gear operator.

2a. Loosen the hex lock nut (counterclockwise) located on the right side of the gear operator.

2b. Using a hex key wrench, loosen the internal set screw approximately three turns (counterclockwise).

NOTICE

- **When using a stem extension kit, additional adjustment may be required to achieve the fully "SHUT" position.**
- **System pressure upstream of the valve may increase while the valve disc is in the fully "SHUT" position.**
- **Flow downstream of the valve will be interrupted with the disc in the fully "SHUT" position.**



3. Verify that the valve is in the fully "SHUT" position. The fully "SHUT" position can be verified by removing the indicator cap from the top of the gear operator and checking the position indicator on top of the stem, as shown to the left.

Instructions continue on the following page

4a. Using a hex key wrench, tighten the internal set screw (clockwise) until it contacts the internal quadrant gear.

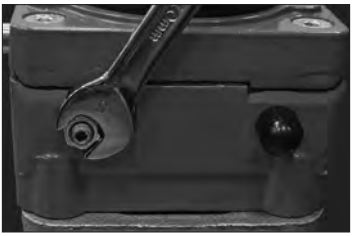
4b. While holding the internal set screw in position with the hex key wrench, tighten the hex lock nut (clockwise).

5. Verify proper operation of the gear operator by turning the handwheel. Repeat the prior steps of this procedure, if necessary.

6. Replace the dust cap, and follow the “OPEN” travel limit stop adjustment procedure on the following page.

Adjusting and Setting the "OPEN" Travel Limit Stops of the Gear Operator

1. Remove the dust cap from the left side of the gear operator.



2a. Loosen the hex lock nut (counterclockwise) located on the left side of the gear operator.

2b. Using a hex key wrench, loosen the internal set screw approximately three turns (counterclockwise).

3. Turn the handwheel counter-clockwise. Verify that the valve is in the fully "OPEN" position by checking the position indicator on top of the stem, as shown to the left. The position indicator on top of the stem should be 90° from the correctly adjusted "SHUT" position.

4a. Using a hex key wrench, tighten the internal set screw (clockwise) until it contacts the internal quadrant gear.

4b. While holding the internal set screw in position with the hex key wrench, tighten the hex lock nut (clockwise).

5. Verify proper operation of the gear operator by turning the handwheel. Repeat the prior steps of this procedure, if necessary.

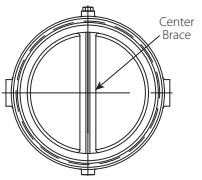
6. Replace the dust cap and indicator cap.

Series W715 AGS Double-Disc Check Valve

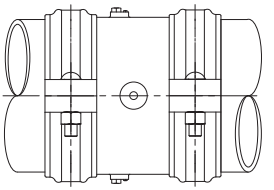
NOTICE

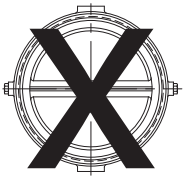
- **To prevent a Series W715 AGS Double-Disc Check Valve from rotating in the system, Victaulic recommends installing the valve with at least one Victaulic Style W07 AGS Rigid Coupling. If two Victaulic AGS Flexible Couplings are used, additional support may be required to prevent valve rotation.**

- When installing a Series W715 AGS Double-Disc Check Valve into the piping system, follow the instructions in this handbook for the applicable AGS Coupling.
- DO NOT use a Victaulic Check Valve as a support for the piping system.
- Placement of check valves too close to sources of unstable flow will shorten the life of the valve and may potentially damage the system. To extend valve life, valves should be installed a reasonable distance downstream from pumps, elbows, expanders, reducers, or other similar devices. Sound piping practices dictate a minimum of five times the pipe diameter for general use. Distances between three and five diameters are allowable, provided the flow velocity is less than 8 feet per second/2.4 meters per second. Distances less than three diameters are not recommended and will violate the Victaulic product warranty. **NOTE:** These distances do not apply to fire protection installations.



Correct Orientation for Horizontal Installation


Horizontal Installation


Incorrect Orientation for Horizontal Installation

- Series W715 AGS Double-Disc Check Valves can be installed either vertically (flow up) or horizontally.
- For horizontal installations, the center brace inside the Series W715 AGS Double-Disc Check Valve shall be in the vertical position, as shown above. Failure to install the valve in the proper orientation will cause improper operation.
- Series W715 AGS Double-Disc Check Valves CAN be connected directly to flanged components with Style W741 AGS *Vic-Flange* Adapters.
- When connecting a Series W715 AGS Double-Disc Check Valve to an AGS Butterfly Valve, a pipe spool is required between the two valves to prevent disc interference.
- When a Series W715 AGS Double-Disc Check Valve is placed near an AGS Butterfly Valve, orient the center brace/disc shaft of the Series W715 at right angles to the butterfly valve's stem. Failure to do so will cause uneven and unstable flow through the Series W715, resulting in noise and reduced valve life.

Series W371 and W372 AGS Gate Valves

- **VICTAULIC AGS GATE VALVES ARE NOT DESIGNED FOR THROTTLING SERVICES.**
- Verify that there is adequate clearance around the valve for operating and maintenance activities.
- The valve can be mounted in vertical and horizontal runs. For horizontal pipe, the valve shall be installed with the stem in the vertical "UP" position (handwheel pointing upward).
- Verify that proper pipe supports are in place to prevent strain on the valve. The piping shall be laid out so that no thrust or bending forces act on the valve body during operation.
- DO NOT use a Victaulic Gate Valve as a support for the piping system.
- Verify that the piping is aligned and supported properly before attempting to install the valve.
- When painting a piping system, DO NOT apply paint to the stem and bolts/nuts.
- DO NOT stand on or use the handwheel as a support point.
- DO NOT over-torque the handwheel to force the valve into the "OPEN" or "CLOSED" position. Refer to the "Torque Limitations" table on the following page.
- When directly connecting a Victaulic AGS End Cap to a Victaulic AGS Gate Valve, use only a tapped end cap with a ball valve that can be opened to verify if the system is depressurized. If the gate valve is opened and then closed unknowingly while the end cap is attached, the space between the gate and end cap will be filled and pressurized. A sudden release of energy can occur if the end cap is removed while the space behind it is pressurized. **PRESSURE SHALL BE VENTED THROUGH THE END CAP'S BALL VALVE BEFORE ATTEMPTING TO REMOVE THE CAP.**

⚠DANGER

- **When directly connecting a Victaulic AGS End Cap to a Victaulic AGS Gate Valve, use only a tapped end cap with a ball valve that can be opened to verify if the system is depressurized.**
- **Pressure shall be vented through the end cap's ball valve before attempting to remove the cap.**

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

Handling

- The valve shall remain in the "CLOSED" position during handling.
- To prevent damage to the seats and sealing surfaces of the valve body, the plastic shipping caps shall remain in place until the time of installation.
- Verify that proper lifting equipment is available for handling larger, heavier valve sizes. Lift the valve by placing straps around the body. **DO NOT lift or suspend the valve by the handwheel.**

Storage

- Victaulic strongly recommends indoor storage of the valve. If outdoor storage is required, the valve shall be stored in the original shipping container and then covered completely with a weatherproof tarp.
- The shipping caps shall remain in place to prevent debris from entering the valve body during storage.
- The valve shall remain in the "CLOSED" position during storage.

Installation

NOTICE

- **To prevent an AGS Gate Valve from rotating in the system, Victaulic recommends installing the valve with at least one Victaulic Style W07 AGS Rigid Coupling. If two Victaulic AGS Flexible Couplings are used, additional support may be required to prevent valve rotation.**

1. Prior to installation, check the valve for any damage. DO NOT use the valve if any damage is present.
2. Remove the plastic shipping caps from the valve body. To prevent damage to the sealing surfaces of the valve body, DO NOT use any sharp instruments to remove the shipping caps.
3. Verify that the valve is in the “CLOSED” position.
4. Follow the instructions in this handbook for the applicable AGS Coupling.
5. Place the system into service after all installation requirements have been met.

Operation

1. Operate the valve by turning the handwheel in the counter-clockwise direction (top view) to the “OPEN” position, then by turning the handwheel in the clockwise direction (top view) to the “CLOSED” position. Repeat this process several times to verify proper operation. **NOTE:** When the valve is in the fully “OPEN” position, turn the handwheel a quarter turn in the clockwise direction to prevent the stem/threads from locking up due to thermal expansion.

Torque Limitations

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Maximum Torque to Reach Fully "OPEN" Position or Fully "CLOSED" Position
14 – 16 DN350 – DN400	14.000 – 16.000 355.6 – 406.4	400 ft-lbs 545 N•m

Inspection

Inspect the valve on a frequency required by the building owner or their representative.

1. Verify that there is no leakage from the gland. If necessary, tighten the nuts at the gland flange evenly by alternating sides. Tighten the nuts ONLY to the point where leakage stops. Overtightening the packing can make the valve difficult to operate.
2. If the handwheel becomes loose, open the valve by turning the handwheel one to two turns in the counterclockwise direction, then tighten the handwheel nut.

Resources

English and Metric Conversion Chart

Convert Imperial (U.S.) to Metric				Convert Metric to Imperial (U.S.)		
25.4	×	inch (in)	⇔	millimeter (mm)	×	0.03937
0.3048	×	feet (ft)	⇔	meter (m)	×	3.281
0.4536	×	pound mass (lb)	⇔	kilogram (kg)	×	2.205
28.35	×	ounce (oz)	⇔	gram (g)	×	0.03527
6.894	×	pound per square inch (psi)	⇔	kilopascal (kPa)	×	0.145
.069	×	pound per square inch (psi)	⇔	Bar (bar)	×	14.5
4.45	×	pound force (lbf)	⇔	newton (N)	×	0.2248
1.356	×	pound-foot (lbf-ft)	⇔	Newton-meter (N•m)	×	0.738
(F – 32) ÷ 1.8		Fahrenheit (°F)	⇔	Celsius (°C)		(C + 17.78) × 1.8
745.7	×	Horsepower (hp)	⇔	Watts (W)	×	1.341×10^{-3}
3.785	×	Gal. per Min. (GPM)	⇔	Liters per min. (L/min)	×	0.2642
0.0038	×	Gal. per Min. (GPM)	⇔	Cubic Meters per min. (m^3/min)	×	264.2

Size		Nominal Wall – inches/mm						Thickness – inches/mm								
Pipe Size inches	Actual Outside Diameter inches/mm	Sch. 5S	Sch. 10S	Sch. 10	Sch. 20	Sch. 30	Std.	Sch. 40	Sch. 60	Extra Strong	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	XX Strong
14	14.000 355.6	0.156 4.0	0.188 4.8	0.250 6.4	0.312 7.9	0.375 9.5	0.375 9.5	0.438 11.1	0.594 15.1	0.500 12.7	0.750 19.1	0.938 23.8	1.094 27.8	1.250 31.8	1.406 35.7	—
16	16.000 406.4	0.165 4.2	0.188 4.8	0.250 6.4	0.312 7.9	0.375 9.5	0.375 9.5	0.500 12.7	0.656 16.7	0.500 12.7	0.844 21.4	1.031 26.2	1.219 31.0	1.438 36.5	1.594 40.5	—
18	18.000 457.0	0.165 4.2	0.188 4.8	0.250 6.4	0.312 7.9	0.438 11.1	0.375 9.5	0.562 14.3	0.750 19.1	0.500 12.7	0.938 23.8	1.156 29.4	1.375 34.9	1.562 39.7	1.781 45.2	—
20	20.000 508.0	0.188 4.8	0.218 5.5	0.250 6.4	0.375 9.5	0.500 12.7	0.375 9.5	0.594 15.1	0.812 20.6	0.500 12.7	1.031 26.2	1.281 32.5	1.500 38.1	1.750 44.5	1.969 50.0	—
22	22.000 559.0	0.188 4.8	0.218 5.5	0.250 6.4	0.375 9.5	0.500 12.7	0.375 9.5	—	0.875 22.2	0.500 12.7	1.125 28.6	1.375 34.9	1.625 41.3	1.875 47.6	2.125 54.0	—
24	24.000 610.0	0.218 5.5	0.250 6.4	0.250 6.4	0.375 9.5	0.562 14.3	0.375 9.5	0.688 17.5	0.969 24.6	0.500 12.7	1.219 31.0	1.531 38.9	1.812 46.0	2.062 52.4	2.344 59.5	—
26	26.000 660.4	—	—	0.312 7.9	0.500 12.7	—	0.375 9.5	—	—	0.500 12.7	1.313 33.4	—	—	—	—	—
28	28.000 711.0	—	—	0.312 7.9	0.500 12.7	0.625 15.9	0.375 9.5	—	—	0.500 12.7	—	—	—	—	—	—
30	30.000 762.0	0.250 6.4	0.312 7.9	0.312 7.9	0.500 12.7	0.625 15.9	0.375 9.5	—	—	0.500 12.7	—	—	—	—	—	—
32	32.000 813.0	—	—	0.312 7.9	0.500 12.7	0.625 15.9	0.375 9.5	0.688 17.5	—	0.500 12.7	—	—	—	—	—	—
34	34.000 863.6	—	—	0.312 7.9	0.500 12.7	0.625 15.9	0.375 9.5	0.688 17.5	—	0.500 12.7	—	—	—	—	—	—

ANSI Commercial Pipe Sizes

Size		Nominal Wall – inches/mm							Thickness – inches/mm								
Pipe Size inches	Actual Outside Diameter inches/mm	Sch. 5S	Sch. 10S	Sch. 10	Sch. 20	Sch. 30	Std.	Sch. 40	Sch. 60	Extra Strong	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	XX Strong
36	36.000 914.0	—	—	0.312 7.9	0.500 12.7	0.625 15.9	0.375 9.5	0.750 19.1	—	0.500 12.7	—	—	—	—	—	—
42	42.000 1067.0	—	—	—	0.375 9.5	—	—	—	—	0.500 12.7	—	—	—	—	—	—
48	48.000 1219.0	—	—	—	0.375 9.5	—	—	—	—	0.500 12.7	—	—	—	—	—	—

Decimal Equivalents of Fractions

Fraction in inches	Decimal Equivalent inches	Decimal Equivalent millimeters
1/64	0.016	0.397
1/32	0.031	0.794
3/64	0.047	1.191
1/16	0.063	1.588
5/64	0.781	1.984
3/32	0.094	2.381
7/64	0.109	2.778
1/8	0.125	3.175
9/64	0.141	3.572
5/32	0.156	3.969
11/64	0.172	4.366
3/16	0.188	4.763
13/64	0.203	5.159
7/32	0.219	5.556
15/64	0.234	5.953
1/4	0.250	6.350
17/64	0.266	6.747
9/32	0.281	7.144
19/64	0.297	7.541
5/16	0.313	7.938
21/64	0.328	8.334
1/3	0.333	8.467
11/32	0.344	8.731
23/64	0.359	9.128
3/8	0.375	9.525
25/64	0.391	9.922
13/32	0.406	10.319
27/64	0.422	10.716
7/16	0.438	11.113
29/64	0.453	11.509
15/32	0.469	11.906
1/2	0.500	12.700

Fraction in inches	Decimal Equivalent inches	Decimal Equivalent millimeters
33/64	0.516	13.097
17/32	0.531	13.494
35/64	0.547	13.891
9/16	0.563	14.288
37/64	0.578	14.684
19/32	0.594	15.081
39/64	0.609	15.478
5/8	0.625	15.875
41/64	0.641	16.272
21/32	0.656	16.669
43/64	0.672	17.066
11/16	0.688	17.463
45/64	0.703	17.859
23/32	0.719	18.256
47/64	0.734	18.653
3/4	0.750	19.050
49/64	0.766	19.447
25/32	0.781	19.844
51/64	0.797	20.241
13/16	0.813	20.638
53/64	0.828	21.034
27/32	0.844	21.431
55/64	0.859	21.828
7/8	0.875	22.225
57/64	0.891	22.622
29/32	0.906	23.019
59/64	0.922	23.416
15/16	0.938	23.813
61/64	0.953	24.209
31/32	0.969	24.606
63/64	0.984	25.003
1	1.000	25.400

Minutes Converted to Decimals of a Degree

Minutes	Degrees	Minutes	Degrees	Minutes	Degrees	Minutes	Degrees
1	.0166	16	.2666	26	.4333	36	.6000
2	.0333	17	.2833	27	.4500	37	.6166
3	.0500	18	.3000	28	.4666	38	.6333
4	.0666	19	.3166	29	.4833	39	.6500
5	.0833	20	.3333	30	.5000	40	.6666
6	.1000	21	.3500	41	.6833	51	.8500
7	.1166	22	.3666	42	.7000	52	.8666
8	.1333	23	.3833	43	.7166	53	.8833
9	.1500	24	.4000	44	.7333	54	.9000
10	.1666	25	.4166	45	.7500	55	.9166
11	.1833	31	.5166	46	.7666	56	.9333
12	.2000	32	.5333	47	.7833	57	.9500
13	.2166	33	.5500	48	.8000	58	.9666
14	.2333	34	.5666	49	.8166	59	.9833
15	.2500	35	.5833	50	.8333	60	1.0000

Pressure to Feet-of-Head of Water

Pounds Per Square Inch	Feet of Head
1	2.31
2	4.62
3	6.93
4	9.24
5	11.54
6	13.85
7	16.16
8	18.47
9	20.78
10	23.09
15	34.63
20	46.18
25	57.72
30	69.27
40	92.36
50	115.45
60	138.54
70	161.63
80	184.72
90	207.81

Pounds Per Square Inch	Feet of Head
100	230.90
110	253.93
120	277.07
130	300.16
140	323.25
150	346.34
160	369.43
170	392.52
180	415.61
200	461.78
250	577.24
300	692.69
350	808.13
400	922.58
500	1154.48
600	1385.39
700	1616.30
800	1847.20
900	2078.10
1000	2309.00

Feet-of-Head of Water to Pressure

Feet of Head	Pounds Per Square Inch
1	0.43
2	0.87
3	1.30
4	1.73
5	2.17
6	2.60
7	3.03
8	3.46
9	3.90
10	4.33
15	6.50
20	8.66
25	10.83
30	12.99
40	17.32
50	21.65
60	25.99
70	30.32
80	34.65
90	39.98

Feet of Head	Pounds Per Square Inch
100	43.31
110	47.64
120	51.97
130	56.30
140	60.63
150	64.96
160	69.29
170	73.63
180	77.96
200	86.62
250	108.27
300	129.93
350	151.58
400	173.24
500	216.55
600	259.85
700	303.16
800	346.47
900	389.78
1000	433.00

Pressure to Meter Water Column

kPa	Meter Water Column
10	1.02
15	1.53
20	2.04
25	2.55
30	3.06
40	4.08
50	5.10
60	6.12
70	7.14
80	8.16
90	9.18
100	10.20
110	11.22
120	12.24
130	13.26
140	14.28
150	15.30
160	16.32
170	17.34
180	18.36

kPa	Meter Water Column
180	18.36
190	19.38
200	20.40
250	25.50
300	30.60
400	40.80
500	51.00
600	61.20
700	71.40
800	81.60
900	91.80
1000	102.00
1500	153.00
2000	204.00
2500	255.00
3000	306.00
4000	408.00
5000	510.00
6000	612.00
7000	714.00

Meter Water Column to Pressure

Meter Water Column	kPa
1	9.8
2	19.6
3	29.4
4	39.2
5	49.0
6	58.8
7	68.6
8	78.4
9	88.2
10	98.0
11	108.0
12	118.0
13	127.0
14	137.0
15	147.0
20	196.0
25	245.0
30	194.0
35	343.0
40	392.0

Meter Water Column	kPa
45	441.0
50	490.0
55	539.0
60	588.0
70	686.0
80	784.0
90	882.0
100	980.0
150	1470.0
200	1960.0
250	2450.0
300	2940.0
350	3430.0
400	3920.0
450	4410.0
500	4900.0
550	5390.0
600	5880.0
650	6370.0
700	6860.0

Where to Find Installation Instructions for Additional Products

The following table provides a general listing of products and their respective installation instructions. Scan the QR code to the left to search for and download the applicable product instructions. **NOTE:** If two sources of instructions are referenced in this index, Victaulic recommends the use of both to ensure proper product installation. Contact Victaulic with any questions regarding this list (scan QR code on back cover for Victaulic locations).

Product	Where to Find Instructions on victaulic.com
Victaulic® End Caps	Search I-ENDCAP
VicFlex™ Products	Search I-VICFLEX
Aquamine™ Spline Couplings	Search I-Aquamine
Victaulic® Bolted Split-Sleeve Couplings	Instructions Shipped with Coupling (or search for specific coupling)
FireLock® Automatic Sprinkler Products	Search I-40
FireLock™ Fire Protection Valves and Accessories	Manual Shipped with Valve or Accessory (or search for specific valve or accessory)
Pipe Preparation Tools	Manual and Repair Parts List Shipped with Tool (or search for specific tool)
Vic-Press Schedule 10S System Products	Search I-P500
Series 76G Automatic Balancing Valve	Search I-76G
Series 76B/76K/76S/76T/76V Automatic Balancing Valves	Search I-76T
Series 121, 122, 124, and E125 Installation-Ready™ Butterfly Valves Installation and Gear Operator Conversion Instructions	Search I-120
Series 247 FireLock Residential Zone Control Riser Module Assembly	Search I-247
Series 317 AWWA Check Valve	Search I-317
Series 365 AWWA Vic-Plug® Valve (3 – 12-inch/88.9 – 323.9-mm Sizes)	Search I-365sm and I-300
Series 377 Vic-Plug Balancing Valve	Search I-365sm and I-100
Series 608N Copper Connection Butterfly Valve	Search I-600
Series 700 Butterfly Valve	Search I-100
Series 705 FireLock™ Butterfly Valve	Search I-765-705, I-BFV_KIT, and I-100
Series 707C FireLock™ Butterfly Valve with Supervised-Closed Switches	Search I-766_707C, I-BFV_KIT, and I-100
Series 712/712S Swinger® Check Valve	Search I-100
Series 713 Swinger Check Valve	Search I-100
Series W715 AGS™ Dual-Disc Vic-Check Valve	Search I-W100
Series 716H/716 Check Valves	Search I-100
Series 717H/717 FireLock™ Check Valves	Search I-100

Product	Where to Find Instructions on victaulic.com
Series 717HR/717R FireLock™ Check Valves	Search I-100
Series 722 Brass Body Ball Valve	Search I-100
Series 723/723S Diverter Ball Valve	Search I-100
Series 726/726S Ball Valve	Search I-100
Series 728 FireLock™ Ball Valve	Search I-728 and I-100
Series 730 *Vic-Strainer* Tee Type	Search I-730_732AGS
Series W730 AGS™ *Vic-Strainer* Tee Type	Search I-730_732AGS
Series 731-D Suction Diffuser	Search I-731-D_W731-D
Series W731-D AGS™ Suction Diffuser	Search I-731-D_W731-D
Series 732 *Vic-Strainer* Wye Type	Search I-730_732AGS
Series W732 AGS *Vic-Strainer* Wye Type	Search I-730_732AGS
Series 733 Venturi Indicator	Search I-100
Series 747M FireLock™ Zone Control Riser Module Assembly	Search I-747M
Series 761 Vic-300 MasterSeal™ Butterfly Valve	Search I-VIC300MS and I-100
Series W761 AGS™ Vic-300 Butterfly Valve	Search I-AGS.GO and I-W100
Series 765 FireLock™ Butterfly Valve	Search I-765-705 and I-100
Series 766 FireLock™ Butterfly Valve with Supervised-Closed Switches	Search I-766_707C, I-BFV_KIT, and I-100
Series 779 Venturi Check Valve and Flow Measuring Kit	Search I-100
TA Series Valves and Meters	Instructions Shipped with Valve or Meter
Series 795 Knife Gate Valve	Search I-795 and I-900
Series 871 Gate Valve	Search I-871
Series 906 Knife Gate Valve	Search I-795 and I-900
Style 005 FireLock™ Rigid Coupling	Search I-100
Style 009N FireLock EZ™ Installation-Ready™ Rigid Coupling	Search I-100
Style 07 Zero-Flex® Rigid Coupling (1 – 12-inch/33.7 – 323.9-mm Sizes)	Search I-100
Style 07 Zero-Flex Rigid Coupling (14 – 24-inch/355.6 – 610-mm Sizes)	Search I-100
Style W07 AGS™ Rigid Coupling	Search I-W100
Style W77/W77B/W77N AGS™ Flexible Couplings	Search I-W100
Style 22, 26, 28, 31, 41, and 44 Couplings for *Vic-Ring* Applications and Shouldered-End Pipe	Search I-6000
Style 31 Coupling for Grooved AWWA Ductile Iron Pipe	Search I-300

Product	Where to Find Instructions on victaulic.com
Style 71 Composite Coupling for PVC and Stainless Steel Pipe (Regional Availability Only)	Search I-100
Style 72 Outlet Coupling	Search I-100
Style 75 Flexible Coupling	Search I-100
Style 77/77A/77S Flexible Coupling	Search I-100
Style 77DX Duplex Stainless Steel Flexible Coupling	Search I-100
Style 78/78A Snap-Joint™ Coupling	Search I-100
Style 89 Rigid Coupling for Stainless Steel	Search I-100
Style W89 AGS™ Rigid Coupling for Stainless Steel or Carbon Steel Pipe	Search I-W100
Style 99 *Roust-A-Bout* Coupling for Plain-End Steel Pipe	Search I-100
No. 101 (90° Elbow) FireLock™ Installation-Ready™ Fitting	Search I-100
No. 103 (45° Elbow) FireLock™ Installation-Ready™ Fitting	Search I-100
No. 102 Straight Tee FireLock™ Installation-Ready™ Fitting	Search I-100
No. 104 Bullhead Tee FireLock™Installation-Ready™ Fitting	Search I-100
Style 107N QuickVic™ Installation-Ready™ Rigid Coupling	Search I-100
Style 107V QuickVic™ Installation-Ready™ Rigid Coupling	Search I-100
Style 108 FireLock™ IGS™ Installation-Ready™ Rigid Coupling	Search I-100
Style 109 FireLock™ Installation-Ready™ Rigid Coupling	Search I-100
Style 115 FireLock EZ™ Installation-Ready™ Reducing Coupling	Search I-100
No. 142 Welded Outlet	Search I-142 and I-100
No. 142F Welded Outlet	Search I-142F and I-100
Style 150 *Mover* Expansion Joint	Search 09.06
Style 152A Expansion Joint Coupling	Search I-152A
Style 155 Expansion Joint	Search 09.06
Style W155 AGS™ Expansion Joint	Search 09.06
Series 159 Flexible Loop	Search I-159
Style 171 Installation-Ready Composite Flexible Coupling	Search I-100
Style 177N QuickVic™ Flexible Coupling	Search I-100
Style 307 AWWA Transition Coupling	Search I-300
Style 341 *Vic-Flange* Adapter	Search I-300

Product	Where to Find Instructions on victaulic.com
Style 441 *Vic-Flange* Adapter	Search I-100
Style 475 Lightweight, Flexible Stainless Steel Coupling	Search I-100
Style 475DX Duplex Stainless Steel Flexible Coupling	Search I-100
Style 489 Rigid Coupling for Stainless Steel Pipe	Search I-100
Style 489DX Duplex Stainless Steel Rigid Coupling	Search I-100
Style 606-EN and 606-AS Rigid Coupling for Copper Tubing	Search I-600
Style 607 QuickVic™ Rigid Coupling for Copper Tubing	Search I-600
Style 622 *Mechanical-T* Bolted Branch Outlet for Copper Tubing	Search I-600
Style 641 *Vic-Flange* Adapter for Copper Tubing	Search I-600
Style 707-IJ NPS-to-JIS Transition Coupling	Search I-100
Style 720 TestMaster™ II Alarm Test Module	Search I-720
Style 720 TestMaster™ II Alarm Test Module with Pressure Relief Option	Search I-720PR
Style 735 Fire Pump Test Meter	Search I-100
Style 741 *Vic-Flange* Adapter	Search I-100
Style W741 AGS™ *Vic-Flange* Adapter	Search I-W100
Style 743 *Vic-Flange* Adapter	Search I-100
Style 744 FireLock™ Flange Adapter	Search I-100
Style 750 Reducing Coupling	Search I-100
Style 791 *Vic-Boltless* Coupling	Search I-100
Style 808 High-Pressure Coupling	Search I-808
Style 870 High-Performance Rigid Coupling	Search I-870
Style 904 Flange Adapter for HDPE-to-Flanged Pipe	Search I-900
Style 905 Coupling for Plain-End HDPE Pipe	Search I-900
Style 907 Transition Coupling for HDPE to Steel Pipe	Search I-900
Style 908 Coupling for Double-Grooved HDPE Pipe	Search I-900
Style 912 FireLock™ Low-Profile Sprinkler-Tee (Regional Availability Only)	Search I-100
Style 920 and 920N *Mechanical-T* Outlets	Search I-100
Style 922 FireLock™ Outlet-T	Search I-100
Style 923 Strapless Outlet	Search I-100

Product	Where to Find Instructions on victaulic.com
Style 924 Strapless Thermometer Outlet	Search I-100
Style 926 *Mechanical-T* Spigot Assembly	Search I-100
Style 994 *Vic-Flange* Adapter for HDPE Pipe	Search I-900
Style 995N Coupling for Plain-End HDPE Pipe	Search I-900
Style 997 Transition Coupling for Plain-End HDPE Pipe to Grooved-End Steel Pipe	Search I-900
Style 2970 Aquamine™ Plain-End Pipe Coupling	Search IT-2970
Style 2971 Aquamine™ Transition Coupling for Plain-End PVC Pipe to Plain-End HDPE Pipe	Search IT-2971
Style 2972 Aquamine™ Transition Coupling for Plain-End PVC Pipe to Grooved Steel Pipe	Search IT-2972
Style HP-70 Rigid Coupling	Search I-100
Style HP-70ES Rigid Coupling with EndSeal® Gasket	Search I-100
Style XL77 Flexible Coupling for Joining "XL" Elbows to NPS Carbon Steel Pipe	Search IT-XL77
Style XL79 Flexible Coupling for Joining "XL" Elbows to "XL" Elbows	Search IT-XL79

Product Data

NOTICE

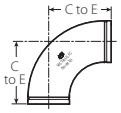
- **The following information contains center-to-end, end-to-end, take-out, and similar overall dimensions for AGS couplings, flange adapters, fittings, valves, and accessories.**
- **Always refer to the current Victaulic product publication for the most up-to-date dimensional information and for products not listed in this section. Product publications can be downloaded at victaulic.com.**

FOR STAINLESS STEEL AGS FITTINGS:

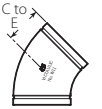
- **For stainless steel AGS fitting product data, refer to submittal 17.05, which can be downloaded at victaulic.com.**

AGS GROOVED-END FITTINGS

No. W10 – 90° Elbow
No. W11 – 45° Elbow
No. W12 – 22½° Elbow
No. W13 – 11¼° Elbow

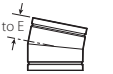


No. W10



No. W11

No. W12



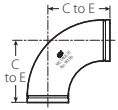
No. W13

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W10 C to E inches/ mm	No. W11 C to E inches/ mm	No. W12 C to E inches/ mm	No. W13 C to E inches/ mm
14 DN350	14.000 355.6	14.00 356	5.80 147	5.00 127	3.50 89
	14.843 377.0	14.84 377	6.15 156	—	—
16 DN400	16.000 406.4	16.00 406	6.63 168	5.00 127	4.00 102
	16.772 426.0	16.77 426	6.95 177	—	—
18 DN450	18.000 457.2	18.00 457	7.46 189	5.50 140	4.50 114
	18.898 480.0	18.90 480	7.83 199	—	—
20 DN500	20.000 508.0	20.00 508	8.28 210	6.00 152	5.00 127
24 DN600	24.000 609.6	24.00 610	9.94 252	7.00 178	6.00 152
26 DN650	26.00 660.4	—	—	6.75 172	5.00 127
28 DN700	28.000 711.2	—	—	7.00 178	5.25 133
30 DN750	30.000 762.0	—	—	7.25 184	5.25 133
32 DN800	32.000 812.8	—	—	7.50 191	5.50 140
36 DN900	36.000 914.4	—	—	7.75 197	5.50 140
40 DN1000	40.000 1016.0	—	—	8.75 222	6.25 159
42 DN1050	42.000 1066.8	—	—	9.00 229	6.25 159
46 DN1150	46.000 1168.4	—	—	9.25 235	6.50 165
48 DN1200	48.000 1219.2	—	—	9.50 241	6.80 173
54 DN1350	54.000 1371.6	—	—	12.00 305	8.75 222
56 DN1400	56.000 1422.4	—	—	12.25 311	9.00 229
60 DN1500	60.000 1524.0	—	—	12.75 324	9.25 235
For sizes larger than 60 inch/DN1500, contact Victaulic.					

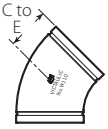
For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W100/LW100 – 90° Long Radius Elbow
No. W110/LW110 – 45° Long Radius Elbow



No. W100/LW100

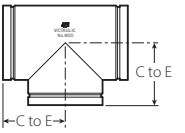


No. W110/LW110

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W100 C to E inches/mm	No. LW100 C to E inches/mm	No. W110 C to E inches/mm	No. LW110 C to E inches/mm
14 DN350	14.000 355.6	21.00 533	21.00 533	8.75 222	8.75 222
16 DN400	16.000 406.4	24.00 610	24.00 610	10.00 254	10.00 254
18 DN450	18.000 457.0	27.00 686	—	11.25 286	—
20 DN500	20.000 508.0	30.00 762	—	12.50 318	—
24 DN600	24.000 609.6	36.00 914	—	15.00 381	—
26 DN650	26.000 660.4	39.00 991	—	16.00 406	—
28 DN700	28.000 711.2	42.00 1067	—	17.25 438	—
30 DN750	30.000 762.0	45.00 1143	—	18.50 470	—
32 DN800	32.000 812.8	48.00 1219	—	19.75 502	—
36 DN900	36.000 914.4	54.00 1372	—	22.25 565	—
40 DN1000	40.000 1016.0	60.00 1524	—	24.88 632	—
42 DN1050	42.000 1066.8	63.00 1600	—	26.00 660	—
46 DN1150	46.000 1168.4	69.00 1752	—	28.63 727	—
48 DN1200	48.000 1219.2	72.00 1828	—	29.88 759	—
54 DN1350	54.000 1371.6	81.00 2057	—	33.50 851	—
56 DN1400	56.000 1422.4	84.00 2134	—	34.75 883	—
60 DN1500	60.000 1524.0	90.00 2286	—	37.25 946	—
For sizes larger than 60 inch/DN1500, contact Victaulic.					

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

No. W20/LW20 – Tee

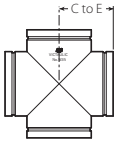


No. W20/LW20

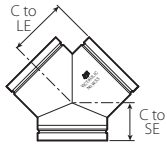
Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W20		No. LW20	
		C to E Run inches/mm	C to E Branch inches/mm	C to E Run inches/mm	C to E Branch inches/mm
14 DN350	14.000 355.6	11.00 279	11.00 279	11.00 279	11.00 279
	14.843 377.0	11.50 292	11.50 292	—	—
16 DN400	16.000 406.4	12.00 305	12.00 305	12.00 305	12.00 305
	16.772 426.0	13.00 330	13.00 330	—	—
18 DN450	18.000 457.0	13.50 343	13.50 343	—	—
	18.898 480.0	14.57 370	14.57 370	—	—
20 DN500	20.000 508.0	15.00 381	15.00 381	—	—
24 DN600	24.000 609.6	17.00 432	17.00 432	—	—
26 DN650	26.000 660.4	19.50 495	19.50 495	—	—
28 DN700	28.000 711.2	20.50 521	20.50 521	—	—
30 DN750	30.000 762.0	22.00 559	22.00 559	—	—
32 DN800	32.000 812.8	23.50 673	23.50 673	—	—
36 DN900	36.000 914.4	26.50 673	26.50 673	—	—
38 DN950	38.000 965.2	28.00 711	28.00 711	—	—
40 DN1000	40.000 1016.0	29.50 749	29.50 749	—	—
42 DN1050	42.000 1066.8	30.00 762	28.00 711	—	—
46 DN1150	46.000 1168.4	33.50 851	33.00 800	—	—
48 DN1200	48.000 1219.2	35.00 889	33.00 838	—	—
54 DN1350	54.000 1371.6	41.00 1041	41.00 1041	—	—
56 DN1400	56.000 1422.4	42.00 1067	42.00 1067	—	—
60 DN1500	60.000 1524.0	45.00 1143	45.00 1143	—	—
For sizes larger than 60 inch/DN1500, contact Victaulic.					

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

No. W35 – Cross
No. W33 – True Wye



No. W35

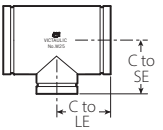


No. W33

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W35	No. W33	
		C to E inches/ mm	C to LE inches/ mm	C to SE inches/ mm
14 DN350	14.000 355.6	11.00 279	11.00 279	7.50 191
16 DN400	16.000 406.4	12.00 305	12.00 305	8.00 203
18 DN450	18.000 457.2	13.50 343	13.50 343	8.50 216
20 DN500	20.000 508.0	15.00 381	15.00 381	9.00 229
24 DN600	24.000 609.6	17.00 432	17.00 432	10.00 254

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

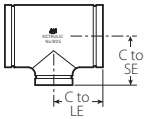
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
14 DN350	× 14 DN350	× 4 DN100	—	—	11.00 279	10.00 254
		6 DN150	11.00 279	9.38 238	—	—
		8 DN200	11.00 279	9.75 248	11.00 279	10.50 267
		10 DN250	11.00 279	10.12 257	11.00 279	10.50 267
		12 DN300	11.00 279	10.62 270	—	—
16 DN400	× 16 DN400	× 4 DN100	—	—	12.00 305	11.00 279
		6 DN150	12.00 305	10.38 264	12.00 305	11.50 292
		8 DN200	12.00 305	10.75 273	12.00 305	11.75 298
		10 DN250	12.00 305	11.12 282	12.00 305	11.75 298
		12 DN300	12.00 305	11.62 295	—	—
		14 DN350	12.00 305	12.00 305	—	—
18 DN450	× 18 DN450	× 6 DN150	13.50 343	11.38 289	—	—
		8 DN200	13.50 343	11.75 298	—	—
		10 DN250	13.50 343	12.12 308	—	—
		12 DN300	13.50 343	12.62 321	—	—
		14 DN350	13.50 343	13.00 330	—	—
		16 DN400	13.50 343	13.00 330	—	—
20 DN500	× 20 DN500	× 6 DN150	15.00 381	12.38 314	—	—
		8 DN200	15.00 381	12.75 324	—	—
		10 DN250	15.00 381	13.12 333	—	—
		12 DN300	15.00 381	13.62 346	—	—
		14 DN350	15.00 381	14.00 356	—	—
		16 DN400	15.00 381	14.00 356	—	—
		18 DN450	15.00 381	14.50 368	—	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

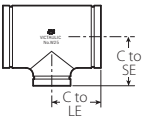
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
24 DN600	× 24 DN600	× 6 DN150	17.00 432	14.38 365	—	—
		8 DN200	17.00 432	14.75 375	—	—
		10 DN250	17.00 432	15.12 384	—	—
		12 DN300	17.00 432	15.62 397	—	—
		14 DN350	17.00 432	16.00 406	—	—
		16 DN400	17.00 432	16.00 406	—	—
		18 DN450	17.00 432	16.50 419	—	—
		20 DN500	17.00 432	17.00 432	—	—
26 DN650	× 26 DN650	× 14 DN350	19.50 495	17.00 432	—	—
		16 DN400	19.50 495	17.00 432	—	—
		18 DN450	19.50 495	17.50 445	—	—
		20 DN500	19.50 495	18.00 457	—	—
		22 DN550	19.50 495	18.50 470	—	—
		24 DN600	19.50 495	19.00 483	—	—
28 DN700	× 28 DN700	× 14 DN350	20.50 521	18.00 457	—	—
		16 DN400	20.50 521	18.00 457	—	—
		18 DN450	20.50 521	18.50 470	—	—
		20 DN500	20.50 521	19.00 483	—	—
		22 DN550	20.50 521	19.50 495	—	—
		24 DN600	20.50 521	20.00 508	—	—
		26 DN650	20.50 521	20.50 521	—	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

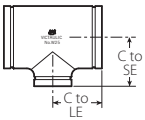
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
30 DN750	× 30 DN750	× 14 DN350	22.00 559	19.00 483	—	—
		16 DN400	22.00 559	19.00 483	—	—
		18 DN450	22.00 559	19.50 495	—	—
		20 DN500	22.00 559	20.00 508	—	—
		22 DN550	22.00 559	20.50 521	—	—
		24 DN600	22.00 559	21.00 533	—	—
		26 DN650	22.00 559	21.50 546	—	—
		28 DN700	22.00 559	21.50 546	—	—
32 DN800	× 32 DN800	× 16 DN400	23.50 597	20.00 508	—	—
		18 DN450	23.50 597	20.50 521	—	—
		20 DN500	23.50 597	21.00 533	—	—
		22 DN550	23.50 597	21.50 546	—	—
		24 DN600	23.50 597	22.00 559	—	—
		26 DN650	23.50 597	22.50 572	—	—
		28 DN700	23.50 597	22.50 572	—	—
		30 DN800	23.50 597	23.00 584	—	—
36 DN900	× 36 DN900	× 18 DN450	26.50 673	22.50 572	—	—
		20 DN500	26.50 673	23.00 584	—	—
		22 DN550	26.50 673	23.50 597	—	—
		24 DN600	26.50 673	24.00 610	—	—
		26 DN650	26.50 673	24.50 622	—	—
		28 DN700	26.50 673	24.50 622	—	—
		30 DN750	26.50 673	25.00 635	—	—
		32 DN800	26.50 673	25.50 648	—	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

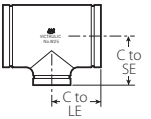
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
38 DN950	× 38 DN950	× 18 DN450	28.00 711	23.50 597	—	—
		20 DN500	28.00 711	24.00 610	—	—
		22 DN550	28.00 711	24.50 622	—	—
		24 DN600	28.00 711	25.00 635	—	—
		26 DN650	28.00 711	25.50 648	—	—
		28 DN700	28.00 711	25.50 648	—	—
		30 DN750	28.00 711	26.50 673	—	—
		32 DN800	28.00 711	27.00 686	—	—
		36 DN900	28.00 711	28.00 711	—	—
40 DN1000	× 40 DN1000	× 20 DN500	29.50 749	25.00 635	—	—
		22 DN550	29.50 749	25.50 648	—	—
		24 DN600	29.50 749	26.00 660	—	—
		26 DN650	29.50 749	26.50 673	—	—
		28 DN700	29.50 749	26.50 673	—	—
		30 DN750	29.50 749	27.50 699	—	—
		32 DN800	29.50 749	28.00 711	—	—
		36 DN900	29.50 749	29.00 737	—	—
		38 DN950	29.50 749	29.50 749	—	—
42 DN1050	× 42 DN1050	× 20 DN500	30.00 762	26.00 660	—	—
		22 DN550	30.00 762	26.00 660	—	—
		24 DN600	30.00 762	26.00 660	—	—
		26 DN650	30.00 762	27.50 699	—	—
		28 DN700	30.00 762	27.50 699	—	—
		30 DN750	30.00 762	28.00 711	—	—
		32 DN800	30.00 762	28.00 711	—	—

⚠ For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

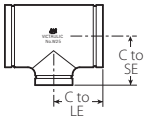
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
42 DN1050 ×	42 DN1050 ×	36 DN900	30.00 762	28.00 711	—	—
		38 DN950	30.00 762	28.00 711	—	—
		40 DN1000	30.00 762	28.00 711	—	—
46 DN1150 ×	46 DN1150 ×	22 DN550	33.50 851	28.50 724	—	—
		24 DN600	33.50 851	28.50 724	—	—
		26 DN650	33.50 851	29.00 737	—	—
		28 DN700	33.50 851	29.00 737	—	—
		30 DN750	33.50 851	29.00 737	—	—
		32 DN800	33.50 851	29.50 749	—	—
		36 DN900	33.50 851	30.00 762	—	—
		38 DN950	33.50 851	30.00 762	—	—
		40 DN1000	33.50 851	30.50 775	—	—
		42 DN1050	33.50 851	31.00 787	—	—
48 DN1200 ×	48 DN1200 ×	24 DN600	35.00 889	29.00 737	—	—
		26 DN650	35.00 889	30.00 762	—	—
		28 DN700	35.00 889	30.00 762	—	—
		30 DN750	35.00 889	30.00 762	—	—
		32 DN800	35.00 889	31.00 787	—	—
		36 DN900	35.00 889	31.00 787	—	—
		38 DN950	35.00 889	32.00 813	—	—
		40 DN1000	35.00 889	32.00 813	—	—
		42 DN1050	35.00 889	32.00 813	—	—
		46 DN1150	35.00 889	33.00 838	—	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

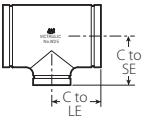
No. W25/LW25 – Reducing Tee



Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
54 DN1350 ×	54 DN1350 ×	26 DN650	41.00 1041	41.00 1041	—	—
		28 DN700	41.00 1041	41.00 1041	—	—
		30 DN750	41.00 1041	41.00 1041	—	—
		32 DN800	41.00 1041	41.00 1041	—	—
		36 DN900	41.00 1041	41.00 1041	—	—
		38 DN950	41.00 1041	41.00 1041	—	—
		40 DN1000	41.00 1041	41.00 1041	—	—
		42 DN1050	41.00 1041	41.00 1041	—	—
		46 DN1150	41.00 1041	41.00 1041	—	—
		48 DN1200	41.00 1041	41.00 1041	—	—
56 DN1400 ×	56 DN1400 ×	28 DN700	42.00 1067	42.00 1067	—	—
		30 DN750	42.00 1067	42.00 1067	—	—
		32 DN800	42.00 1067	42.00 1067	—	—
		36 DN900	42.00 1067	42.00 1067	—	—
		38 DN950	42.00 1067	42.00 1067	—	—
		40 DN1000	42.00 1067	42.00 1067	—	—
		42 DN1050	42.00 1067	42.00 1067	—	—
		46 DN1150	42.00 1067	42.00 1067	—	—
		48 DN1200	42.00 1067	42.00 1067	—	—
		54 DN1350	42.00 1067	42.00 1067	—	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

No. W25/LW25 – Reducing Tee

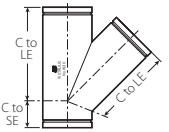


Nominal Fitting Size inches/DN			No. W25		No. LW25	
			C to LE inches/mm	C to SE inches/mm	C to LE inches/mm	C to SE inches/mm
60 DN1500 ×	60 DN1500 ×	30 DN750	44.00 1118	44.00 1118	—	—
		32 DN800	44.00 1118	44.00 1118	—	—
		36 DN900	44.00 1118	44.00 1118	—	—
		38 DN950	44.00 1118	44.00 1118	—	—
		40 DN1000	44.00 1118	44.00 1118	—	—
		42 DN1050	44.00 1118	44.00 1118	—	—
		46 DN1150	44.00 1118	44.00 1118	—	—
		48 DN1200	44.00 1118	44.00 1118	—	—
		54 DN1350	44.00 1118	44.00 1118	—	—
		56 DN1400	44.00 1118	44.00 1118	—	—
For sizes larger than 60 x 60 x 56 inch/DN1500 x DN1500 x DN1400, contact Victaulic.						

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W30 – 45° Lateral



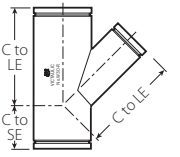
Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W30	
		C to LE inches/mm	C to SE inches/mm
14 DN350	14.000 355.6	26.50 673	7.50 191
16 DN400	16.000 406.4	29.00 737	8.00 203
18 DN450	18.000 457.2	32.00 813	8.50 216
20 DN500	20.000 508.0	35.00 889	9.00 229
24 DN600	24.000 609.6	40.00 1016	10.00 254

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W30-R – 45° Reducing Lateral

Nominal Fitting Size inches/DN				No. W30-R	
				C to LE inches/mm	C to SE inches/mm
14 DN350	×	14 DN350	× 4 DN100	26.50 673	7.50 191
			6 DN150	26.50 673	7.50 191
			8 DN200	26.50 673	7.50 191
			10 DN250	26.50 673	7.50 191
			12 DN300	26.50 673	7.50 191
16 DN400	×	16 DN400	× 6 DN150	29.00 737	8.00 203
			8 DN200	29.00 737	8.00 203
			10 DN250	29.00 737	8.00 203
			12 DN300	29.00 737	8.00 203
			14 DN350	29.00 737	8.00 203
18 DN450	×	18 DN450	× 6 DN150	32.00 813	8.50 216
			8 DN200	32.00 813	8.50 216
			12 DN300	32.00 813	8.50 216
			14 DN350	32.00 813	8.50 216
			16 DN400	32.00 813	8.50 216
20 DN500	×	20 DN500	× 12 DN300	35.00 889	9.00 229
			14 DN350	35.00 889	9.00 229
			16 DN400	35.00 889	9.00 229
24 DN600	×	24 DN600	× 16 DN400	40.00 1016	10.00 254
			20 DN500	40.00 1016	10.00 254



No. W30-R

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W42 – AGS Grooved x Beveled Adapter Nipple
No. W43 – AGS Grooved x AGS Grooved Adapter Nipple
No. W49 – AGS Grooved x Non-AGS Grooved Adapter Nipple

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W42, W43, W49 E to E inches/mm
14 DN350	14.000 355.6	8.00 203
16 DN400	16.000 406.4	8.00 203
18 DN450	18.000 457.2	8.00 203
20 DN500	20.000 508.0	8.00 203
24 DN600	24.000 609.6	8.00 203
26 DN650	26.000 660.4	12.00 304.8
28 DN700	28.000 711.2	12.00 304.8
30 DN750	30.000 762.0	12.00 304.8
32 DN800	32.000 812.8	12.00 304.8
36 DN900	36.000 914.4	12.00 304.8
40 DN1000	40.000 1016.0	12.00 304.8
42 DN1050	42.000 1066.8	12.00 304.8
46 DN1150	46.000 1168.4	12.00 304.8
48 DN1200	48.000 1219.2	12.00 304.8
54 DN1350	54.000 1371.6	12.00 304.8
56 DN1400	56.000 1422.4	12.00 304.8
60 DN1500	60.000 1524.0	12.00 304.8
For sizes larger than 60 inch/DN1500, contact Victaulic.		

No. W42

No. W43

No. W49

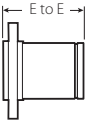
* No. W49 AGS Grooved x Non-AGS Grooved Adapter Nipple available in 14 – 24 inch/DN350 – DN600 sizes only.

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W45R/LW45R – AGS Raised-Face Flange Adapter Nipple 150#

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W45R	No. LW45R
		E to E inches/mm	E to E inches/mm
14 DN350	14.000 355.6	8.00 203	8.00 203
16 DN400	16.000 406.4	8.00 203	8.00 203
18 DN450	18.000 457.2	8.00 203	—
20 DN500	20.000 508.0	8.00 203	—
24 DN600	24.000 609.6	8.00 203	—
26 DN650	26.000 660.4	12.00 304.8	—
28 DN700	28.000 711.2	12.00 304.8	—
30 DN750	30.000 762.0	12.00 304.8	—
32 DN800	32.000 812.8	12.00 304.8	—
36 DN900	36.000 914.4	12.00 304.8	—
40 DN1000	40.000 1016.0	12.00 304.8	—
42 DN1050	42.000 1066.8	12.00 304.8	—
46 DN1150	46.000 1168.4	12.00 304.8	—
48 DN1200	48.000 1219.2	12.00 304.8	—
54 DN1350	54.000 1371.6	16.00 406.4	—
56 DN1400	56.000 1422.4	16.00 406.4	—
60 DN1500	60.000 1524.0	16.00 406.4	—
For sizes larger than 60 inch/DN1500, contact Victaulic.			



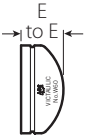
No. W45R/LW45R

For AWWA and alternate flange specifications, contact Victaulic.

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

No. W60/LW60 – Cap

Nominal Fitting Size inches/DN	Actual Pipe Outside Diameter inches/mm	No. W60 T Thickness inches/mm	No. LW60 T Thickness inches/mm
14 DN350	14.000 355.6	6.50 165	6.50 165
16 DN400	16.000 406.4	7.00 178	7.00 178
18 DN450	18.000 457.2	8.00 203	—
20 DN500	20.000 508.0	9.00 229	—
24 DN600	24.000 609.6	10.50 267	—
26 DN650	26.000 660.4	14.50 368	—
28 DN700	28.000 711.2	15.00 381	—
30 DN750	30.000 762.0	15.50 394	—
32 DN800	32.000 812.8	16.00 406	—
36 DN900	36.000 914.4	17.00 432	—
40 DN1000	40.000 1016.8	18.00 457	—
42 DN1050	42.000 1066.8	18.50 470	—
46 DN1150	46.000 1168.4	19.50 495	—
48 DN1200	48.000 1219.2	20.00 508	—
54 DN1372	54.000 1371.6	21.50 546	—
56 DN1422	56.000 1422.4	22.00 559	—
60 DN1524	60.000 1524.0	23.00 584	—
For sizes larger than 60 inch/DN1500, contact Victaulic.			



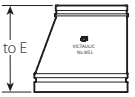
No. W60/LW60

For end caps with an NPT or BST tapped port, contact Victaulic.

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer



Nominal Fitting Size inches/DN			No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
14 DN350	×	6 DN150	14.00 356	—	13.00 330	—
		8 DN200	14.00 356	14.00 356	13.00 330	14.00 356
		10 DN250	14.00 356	14.00 356	13.00 330	—
		12 DN300	14.00 356	14.00 356	13.00 330	14.00 356
377 mm	×	10 273	13.00 330	—	13.00 330	—
		12 323.9	14.00 356	—	13.00 330	—
16 DN400	×	8 DN200	14.00 356	14.00 356	14.00 356	14.00 356
		10 DN250	14.00 356	14.00 356	14.00 356	—
		12 DN300	14.00 356	14.00 356	14.00 356	14.00 356
		14 DN400	14.00 356	14.00 356	14.00 356	—
426 mm	×	12 323.9	14.00 356	—	14.00 356	—
		377 mm	14.00 356	—	14.00 356	—
18 DN450	×	10 DN250	15.00 381	—	15.00 381	—
		12 DN300	15.00 381	—	15.00 381	—
		14 DN350	15.00 381	—	15.00 381	—
		16 DN400	15.00 381	—	15.00 381	—
480 mm	×	426 mm	13.00 330	—	13.00 330	—
		377 mm	14.00 356	—	13.00 330	—
20 DN500	×	12 DN300	20.00 508	—	20.00 508	—
		14 DN350	20.00 508	—	20.00 508	—
		16 DN400	20.00 508	—	20.00 508	—
		18 DN450	20.00 508	—	20.00 508	—

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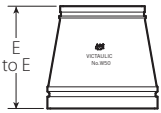
AGS GROOVED-END FITTINGS

No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer



Nominal Fitting Size inches/DN			No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
24 DN600	×	16 DN400	20.00 508	—	20.00 508	—
		18 DN450	20.00 508	—	20.00 508	—
		20 DN500	20.00 508	—	20.00 508	—
26 DN650	×	14 DN350	24.00 610	—	24.00 610	—
		16 DN400	24.00 610	—	24.00 610	—
		18 DN450	24.00 610	—	24.00 610	—
		20 DN500	24.00 610	—	24.00 610	—
		22 DN550	24.00 610	—	24.00 610	—
		24 DN600	24.00 610	—	24.00 610	—
28 DN700	×	14 DN350	24.00 610	—	24.00 610	—
		16 DN400	24.00 610	—	24.00 610	—
		18 DN450	24.00 610	—	24.00 610	—
		20 DN500	24.00 610	—	24.00 610	—
		22 DN550	24.00 610	—	24.00 610	—
		24 DN600	24.00 610	—	24.00 610	—
		26 DN650	24.00 610	—	24.00 610	—

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AGS GROOVED-END FITTINGS

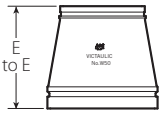
No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer

Nominal Fitting Size inches/DN		No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
30 DN750	× 14 DN350	24.00 610	—	24.00 610	—
	16 DN400	24.00 610	—	24.00 610	—
	18 DN450	24.00 610	—	24.00 610	—
	20 DN500	24.00 610	—	24.00 610	—
	22 DN550	24.00 610	—	24.00 610	—
	24 DN600	24.00 610	—	24.00 610	—
	26 DN650	24.00 610	—	24.00 610	—
	28 DN700	24.00 610	—	24.00 610	—
32 DN800	× 16 DN400	24.00 610	—	24.00 610	—
	18 DN450	24.00 610	—	24.00 610	—
	20 DN500	24.00 610	—	24.00 610	—
	22 DN550	24.00 610	—	24.00 610	—
	24 DN600	24.00 610	—	24.00 610	—
	26 DN650	24.00 610	—	24.00 610	—
	28 DN700	24.00 610	—	24.00 610	—
	30 DN750	24.00 610	—	24.00 610	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer



Nominal Fitting Size inches/DN		No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
36 DN900	× 18 DN450	24.00 610	—	24.00 610	—
	20 DN500	24.00 610	—	24.00 610	—
	22 DN550	24.00 610	—	24.00 610	—
	24 DN600	24.00 610	—	24.00 610	—
	26 DN650	24.00 610	—	24.00 610	—
	28 DN700	24.00 610	—	24.00 610	—
	30 DN750	24.00 610	—	24.00 610	—
	32 DN800	24.00 610	—	24.00 610	—
40 DN1000	× 20 DN500	24.00 610	—	24.00 610	—
	22 DN550	24.00 610	—	24.00 610	—
	24 DN600	24.00 610	—	24.00 610	—
	26 DN650	24.00 610	—	24.00 610	—
	28 DN700	24.00 610	—	24.00 610	—
	30 DN750	24.00 610	—	24.00 610	—
	32 DN800	24.00 610	—	24.00 610	—
	36 DN900	24.00 610	—	24.00 610	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

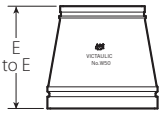
No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer

Nominal Fitting Size inches/DN		No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
42 DN1050	× 20 DN500	24.00 610	—	24.00 610	—
	22 DN550	24.00 610	—	24.00 610	—
	24 DN600	24.00 610	—	24.00 610	—
	26 DN650	24.00 610	—	24.00 610	—
	28 DN700	24.00 610	—	24.00 610	—
	30 DN750	24.00 610	—	24.00 610	—
	32 DN800	24.00 610	—	24.00 610	—
	36 DN900	24.00 610	—	24.00 610	—
	40 DN1000	24.00 610	—	24.00 610	—
46 DN1150	× 22 DN550	28.00 711	—	28.00 711	—
	24 DN600	28.00 711	—	28.00 711	—
	26 DN650	28.00 711	—	28.00 711	—
	28 DN700	28.00 711	—	28.00 711	—
	30 DN750	28.00 711	—	28.00 711	—
	32 DN800	28.00 711	—	28.00 711	—
	36 DN900	28.00 711	—	28.00 711	—
	38 DN950	28.00 711	—	28.00 711	—
	40 DN1000	28.00 711	—	28.00 711	—
	42 DN1050	28.00 711	—	28.00 711	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer



Nominal Fitting Size inches/DN		No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
48 DN1200	× 24 DN600	28.00 711	—	28.00 711	—
	26 DN650	28.00 711	—	28.00 711	—
	28 DN700	28.00 711	—	28.00 711	—
	30 DN750	28.00 711	—	28.00 711	—
	32 DN800	28.00 711	—	28.00 711	—
	36 DN900	28.00 711	—	28.00 711	—
	38 DN950	28.00 711	—	28.00 711	—
	40 DN1000	28.00 711	—	28.00 711	—
	42 DN1050	28.00 711	—	28.00 711	—
	46 DN1150	28.00 711	—	28.00 711	—
54 DN1350	× 26 DN650	54.00 1372	—	54.00 1372	—
	28 DN700	54.00 1372	—	54.00 1372	—
	30 DN750	54.00 1372	—	54.00 1372	—
	32 DN800	54.00 1372	—	54.00 1372	—
	36 DN900	54.00 1372	—	54.00 1372	—
	38 DN950	54.00 1372	—	54.00 1372	—
	40 DN1000	54.00 1372	—	54.00 1372	—
	42 DN1050	54.00 1372	—	54.00 1372	—
	46 DN1150	54.00 1372	—	54.00 1372	—
	48 DN1200	54.00 1372	—	54.00 1372	—

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS GROOVED-END FITTINGS

No. W50/LW50 – Concentric Reducer
No. W51/LW51 – Eccentric Reducer

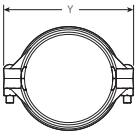
Nominal Fitting Size inches/DN		No. W50 E to E inches/mm	No. LW50 E to E inches/mm	No. W51 E to E inches/mm	No. LW51 E to E inches/mm
56 DN1400	× 28 DN700	56.00 1422	—	56.00 1422	—
	30 DN750	56.00 1422	—	56.00 1422	—
	32 DN800	56.00 1422	—	56.00 1422	—
	36 DN900	56.00 1422	—	56.00 1422	—
	38 DN950	56.00 1422	—	56.00 1422	—
	40 DN1000	56.00 1422	—	56.00 1422	—
	42 DN1050	56.00 1422	—	56.00 1422	—
	46 DN1150	56.00 1422	—	56.00 1422	—
	48 DN1200	56.00 1422	—	56.00 1422	—
	54 DN1350	56.00 1422	—	56.00 1422	—
60 DN1500	× 30 DN750	60.00 1524	—	60.00 1524	—
	32 DN800	60.00 1524	—	60.00 1524	—
	36 DN900	60.00 1524	—	60.00 1524	—
	38 DN950	60.00 1524	—	60.00 1524	—
	40 DN1000	60.00 1524	—	60.00 1524	—
	42 DN1050	60.00 1524	—	60.00 1524	—
	46 DN1150	60.00 1524	—	60.00 1524	—
	48 DN1200	60.00 1524	—	60.00 1524	—
	54 DN1350	60.00 1524	—	60.00 1524	—
	56 DN1400	60.00 1524	—	60.00 1524	—

For sizes larger than 60 x 56 inch/DN1500 x DN1400, contact Victaulic.

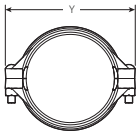
For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS RIGID COUPLINGS FOR AGS PREPARED PIPE

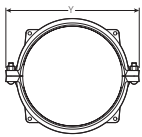
Style W07/LW07 – AGS Rigid Coupling
Style W89 – AGS Rigid Coupling



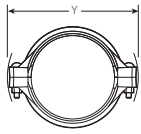
Style W07
14 – 24-inch/
DN350 – DN600



Style LW07
14 – 16-inch/
DN350 – DN400



Style W07
26 – 50-inch/
DN650 – DN1250



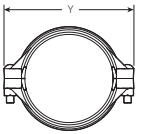
Style W89
14 – 24-inch/
DN350 – DN600

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	"Y" Dimension – inches/mm		
		Style W07	Style LW07	Style W89
14 DN350	14.000 355.6	20.88 530	20.88 530	21.38 543
	14.843 377.0	21.75 552	—	—
16 DN400	16.000 406.4	22.88 582	22.88 582	23.50 597
	16.772 426.0	23.75 604	—	—
18 DN450	18.000 457.0	25.00 636	—	25.63 651
	18.898 480.0	26.25 666	—	—
20 DN500	20.000 508.0	28.00 712	—	27.63 702
	20.866 530.0	29.00 736	—	—
22 DN550	22.000 558.8	30.25 768	—	29.88 759
24 DN600	24.000 609.6	32.25 820	—	32.00 813
	24.803 630.0	33.25 844	—	—
26 DN650	26.000 660.4	35.75 908	—	—
28 DN700	28.000 711.2	37.75 958	—	—
30 DN750	30.000 762.0	40.25 1022	—	—
32 DN800	32.000 812.8	42.25 1074	—	—
34 DN850	34.000 863.6	44.25 1124	—	—
36 DN900	36.000 914.4	46.25 1174	—	—
38 DN900	38.000 965.0	48.25 1226	—	—
40 DN1000	40.000 1016.0	51.00 1296	—	—
42 DN1050	42.000 1066.8	53.00 1346	—	—

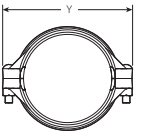
⚠ For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS RIGID COUPLINGS FOR AGS PREPARED PIPE

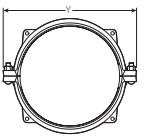
Style W07/LW07 – AGS Rigid Coupling
Style W89 – AGS Rigid Coupling



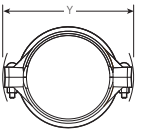
Style W07
14 – 24-inch/
DN350 – DN600



Style LW07
14 – 16-inch/
DN350 – DN400



Style W07
26 – 50-inch/
DN650 – DN1250



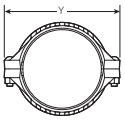
Style W89
14 – 24-inch/
DN350 – DN600

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	"Y" Dimension – inches/mm		
		Style W07	Style LW07	Style W89
44 DN1100	44.000 1117.6	55.00 1398	—	—
46 DN1150	46.000 1168.4	57.00 1448	—	—
48 DN1200	48.000 1219.2	59.00 1498	—	—
50 DN1250	50.000 1270.0	61.50 1562	—	—

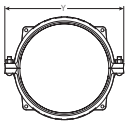
For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS FLEXIBLE COUPLINGS FOR AGS PREPARED PIPE

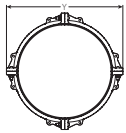
Style W77 – AGS Flexible Coupling
Style W77B – AGS Flexible Coupling



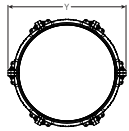
Style W77
14 – 24-inch/
DN350 – DN600



Style W77
26 – 50-inch/
DN650 – DN1250



Style W77B
52 – 72-inch/
DN1300–DN1800



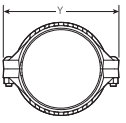
Style W77B
90-inch/DN2250
and Larger

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	"Y" Dimension – inches/mm	
		Style W77	Style W77B
14 DN350	14.000 355.6	20.88 530	—
	14.843 377.0	21.75 552	—
16 DN400	16.000 406.4	22.88 582	—
	16.772 426.0	23.75 604	—
18 DN450	18.000 457.2	24.88 632	—
	18.898 480.0	26.25 666	—
20 DN500	20.000 508.0	28.00 712	—
	20.866 530.0	29.00 736	—
22 DN550	22.000 558.8	30.50 774	—
24 DN600	24.000 609.6	32.25 820	—
	24.803 630.0	33.25 844	—
26 DN650	26.000 660.4	35.75 908	—
28 DN700	28.000 711.2	37.75 958	—
30 DN750	30.000 762.0	40.25 1022	—
32 DN800	32.000 812.8	42.25 1074	—
34 DN850	34.000 863.6	44.25 1124	—
36 DN900	36.000 914.4	46.25 1174	—
38 DN900	38.000 965.2	48.25 1226	—
40 DN1000	40.000 1016.0	51.50 1308	—
42 DN1050	42.000 1066.8	53.00 1346	—
44 DN1100	44.000 1117.6	55.00 1398	—

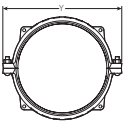
⚠ For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS FLEXIBLE COUPLINGS FOR AGS PREPARED PIPE

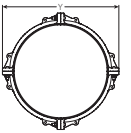
Style W77 – AGS Flexible Coupling
Style W77B – AGS Flexible Coupling



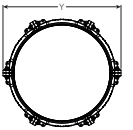
Style W77
14 – 24-inch/
DN350 – DN600



Style W77
26 – 50-inch/
DN650 – DN1500



Style W77B
54 – 88-inch/
DN1350–DN2200



Style W77B
90-inch/DN2250
and Larger

Nominal Coupling Size inches/DN	Actual Pipe Outside Diameter inches/mm	"Y" Dimension – inches/mm	
		Style W77	Style W77B
46 DN1150	46.000 1168.4	57.00 1448	—
48 DN1200	48.000 1219.2	59.00 1498	—
50 DN1250	50.000 1270.0	61.50 1562	—
52 DN1300	52.000 1320.8	—	67.50 1715
54 DN1350	54.000 1371.6	—	69.50 1766
56 DN1400	56.000 1422.2	—	71.50 1816
58 DN1450	58.000 1473.2	—	73.50 1866
60 DN1500	60.000 1524.0	—	75.50 1918
62 DN1550	62.000 1574.8	—	78.50 1994
64 DN1600	64.000 1625.6	—	80.50 2044
66 DN1650	66.000 1676.4	—	82.50 2096
68 DN1700	68.000 1727.2	—	84.50 2146
70 DN1750	70.000 1778.0	—	87.50 2223
72 DN1800	72.000 1828.8	—	89.50 2274

Nominal Pipe Size inches/DN	Coupling/ AGS *Vic-Ring* Size inches/mm	"Y" Dimension – inches/mm
		Style W77B
74 DN1850	78.000 1981.2	97.50 2476
80 DN2000	84.000 2133.6	103.50 2628
84 DN2100	88.000 2235.2	107.50 2730
90 DN2250	94.000 2387.6	115.50 2934
96 DN2400	100.000 2540.0	121.50 3086
For additional sizes, contact Victaulic.		

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS *VIC-FLANGE* ADAPTER FOR AGS GROOVED-END PIPE

Style W741 – AGS *Vic-Flange* Adapter (ANSI Class 125/150)

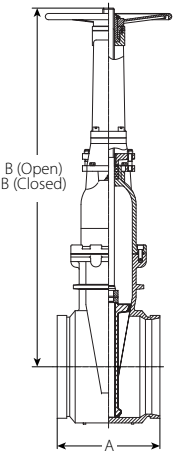
Nominal Flange Size inches/DN	Actual Pipe Outside Diameter inches/mm	"W" Dimension – inches/mm
		Style W741
14 DN350	14.000 355.6	24.5 622
16 DN400	16.000 406.4	27.1 688
18 DN450	18.000 457.0	29.0 737
20 DN500	20.000 508.0	31.5 800
24 DN600	24.000 609.6	36.0 914

Style W741

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS VALVES FOR AGS GROOVED-END PIPE

Series W371 – AGS Open Stem & Yoke (OS&Y) Gate Valve

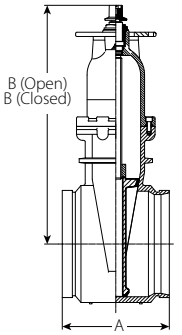


Nominal Valve Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm		
		A End-to-End	B Height Closed	B Height Open
14 DN350	14.000 355.6	15.00 381	53.00 1346	66.75 1695
16 DN400	16.000 406.4	16.00 406	55.88 1419	71.63 1819

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS VALVES FOR AGS GROOVED-END PIPE

Series W372 – AGS Non-Rising Stem (NRS) Gate Valve

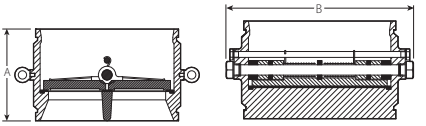


Nominal Valve Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	B Height Open/Closed
14 DN350	14.000 355.6	15.00 381	32.50 826
16 DN400	16.000 406.4	16.00 406	36.00 914

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS VALVES FOR AGS GROOVED-END PIPE

Series W715 – AGS Double Disc *Vic-Check* Valve

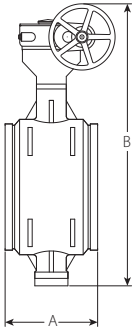


Nominal Valve Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	B Overall Width
14 DN350	14.000 355.6	10.75 273	15.04 382
16 DN400	16.000 406.4	12.00 305	19.88 505
18 DN450	18.000 457.2	14.25 362	21.54 547
20 DN500	20.000 508.0	14.50 368	24.72 628
24 DN600	24.000 609.6	15.50 394	28.82 732

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS VALVES FOR AGS GROOVED-END PIPE

Series W719 – AGS Butterfly Valve

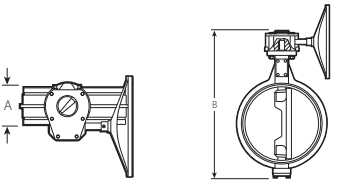


Nominal Valve Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	B Overall Height
14 DN350	14.000 355.6	15.98 406	39.29 998
16 DN400	16.000 406.4	15.98 406	38.11 968
18 DN450	18.000 457.2	15.98 406	45.39 1153
20 DN500	20.000 508.0	17.99 457	47.44 1205
24 DN600	24.000 609.6	17.99 457	54.84 1393
30 DN750	30.000 762.0	22.01 559	66.57 1691
36 DN900	36.000 914.4	22.01 559	77.13 1959
42 DN1050	42.000 1066.8	24.02 610	85.55 2173
48 DN1200	48.000 1219.2	25.98 660	94.80 2408
54 DN1350	54.000 1371.6	27.99 711	104.57 2656
60 DN1500	60.000 1524.0	30.00 762	111.65 2836

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS VALVES FOR AGS GROOVED-END PIPE

Series W761 – AGS Vic-300™ Butterfly Valve



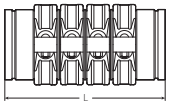
Nominal Valve Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	B Overall Height
14 DN350	14.000 355.6	10.00 254	26.25 667
16 DN400	16.000 406.4	10.50 267	29.00 737
18 DN450	18.000 457.0	11.00 279	32.25 819
20 DN500	20.000 508.0	11.50 292	36.25 921
24 DN600	24.000 609.6	12.00 305	42.50 1080

⚠ For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS EXPANSION JOINT FOR AGS GROOVED-END PIPE

Style W155 – AGS Expansion Joint

Nominal Expansion Joint Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		L - Length (Ref.) Compressed	L - Length (Ref.) Expanded
14 DN350	14.000 355.6	30.00 762	31.75 807
16 DN400	16.000 406.4	30.00 762	31.75 807
18 DN450	18.000 457.2	30.00 762	31.75 807
20 DN500	20.000 508.0	30.00 762	31.75 807
24 DN600	24.000 609.6	30.00 762	31.75 807



Style W155

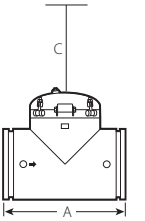
NOTE: For additional sizes or alternate movement capabilities, contact Victaulic.

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W730 – AGS Vic-Strainer

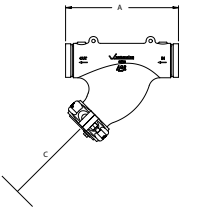
Nominal Vic-Strainer Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	C Basket Clearance
14 DN350	14.000 355.6	22.00 559	28.00 711
16 DN400	16.000 406.4	24.00 610	30.00 762
18 DN450	18.000 457.0	31.00 787	35.00 889
20 DN500	20.000 508.0	34.50 876	38.00 965
24 DN600	24.000 609.6	40.00 1016	44.00 1118



Series W730

Series W732 – AGS Wye-Type Vic-Strainer

Nominal Vic-Strainer Size inches/DN	Actual Pipe Outside Diameter inches/mm	Dimensions – inches/mm	
		A End-to-End	C Basket Clearance
14 DN350	14.000 355.6	34.00 864	30.00 762
16 DN400	16.000 406.4	37.00 940	32.00 813
18 DN450	18.000 457.2	40.51 1029	35.00 889

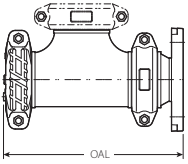


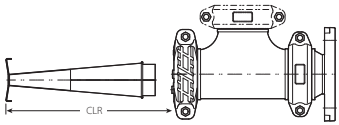
Series W732

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-I – AGS Suction Diffuser (Europe Only)



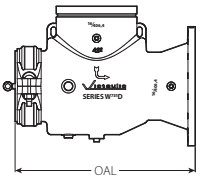


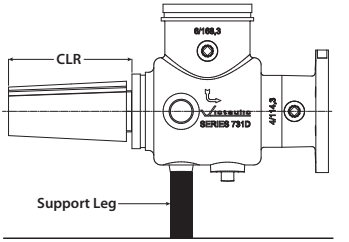
Nominal Suction Diffuser Size inches/DN			Dimensions – inches/mm	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
14 DN350	x	10 DN250	29.00 737	28.00 711
		12 DN300	37.50 953	35.00 889
		14 DN350	40.56 1030	39.00 991
16 DN400	x	12 DN300	37.50 953	35.00 889
		14 DN350	40.56 1030	39.00 991
18 DN450	x	16 DN400	44.50 1130	43.00 1092
24 DN600	x	20 DN500	54.25 1378	55.00 1397

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-D – AGS Suction Diffuser with ANSI Class 150 Flange



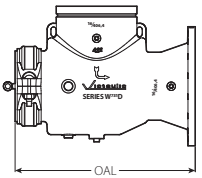


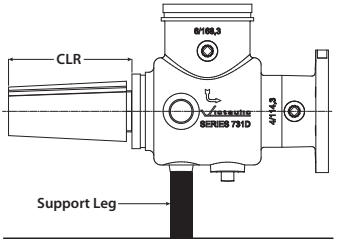
Nominal Suction Diffuser Size inches/DN			Dimensions – inches/mm	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
14 DN350	×	10 DN250	29.00 737	22.00 559
		12 DN300	29.00 737	22.00 559
		14 DN350	29.00 737	22.00 559
16 DN400	×	12 DN300	36.00 914	25.00 635
		14 DN350	36.00 914	25.00 635
		16 DN400	36.00 914	25.00 635
18 DN450	×	14 DN350	39.00 991	28.00 711
		16 DN400	39.00 991	28.00 711
		18 DN450	39.00 991	28.00 711
20 DN500	×	16 DN400	43.00 1092	30.00 762
		18 DN450	43.00 1092	30.00 762
		20 DN500	43.00 1092	30.00 762
24 DN600	×	18 DN450	47.00 1194	34.00 864
		20 DN500	47.00 1194	34.00 864
		24 DN600	47.00 1194	34.00 864

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-D – AGS Suction Diffuser with PN10/PN16 Flange



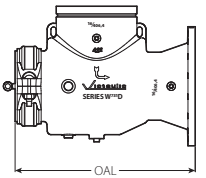


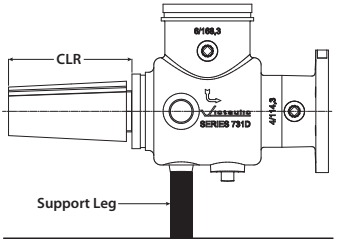
Nominal Suction Diffuser Size DN/inches			Dimensions – mm/inches	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
DN350 14	×	DN250 10	737 29.00	559 22.00
		DN300 12	737 29.00	559 22.00
		DN350 14	737 29.00	559 22.00
DN400 16	×	DN300 12	914 36.00	635 25.00
		DN350 14	914 36.00	635 25.00
		DN400 16	914 36.00	635 25.00
DN450 18	×	DN350 14	991 39.00	711 28.00
		DN400 16	991 39.00	711 28.00
		DN450 18	991 39.00	711 28.00
DN500 20	×	DN400 16	1092 43.00	762 30.00
		DN450 18	1092 43.00	762 30.00
		DN500 20	1092 43.00	762 30.00
DN600 24	x	DN450 18	1194 47.00	864 34.00
		DN500 20	1194 47.00	864 34.00
		DN600 24	1194 47.00	864 34.00

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-D – AGS Suction Diffuser with GB Flange



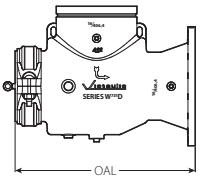


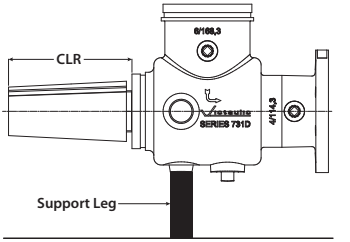
Nominal Suction Diffuser Size DN/inches			Dimensions – mm/inches	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
DN350	×	DN250	737	559
14		10	29.00	22.00
		DN300	737	559
		12	29.00	22.00
		DN350	737	559
		14	29.00	22.00
DN400	×	DN300	914	635
16		12	36.00	25.00
		DN350	914	635
		14	36.00	25.00
		DN400	914	635
		16	36.00	25.00
DN450	×	DN350	991	711
18		14	39.00	28.00
		DN400	991	711
		16	39.00	28.00
		DN450	991	711
		18	39.00	28.00
DN500	×	DN400	1092	762
20		16	43.00	30.00
		DN450	1092	762
		18	43.00	30.00
		DN500	1092	762
		20	43.00	30.00
DN600	×	DN450	1194	864
24		18	47.00	34.00
		DN500	1194	864
		20	47.00	34.00
		DN600	1194	864
		24	47.00	34.00

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-D – AGS Suction Diffuser with JIS Flange



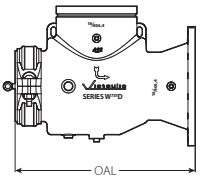


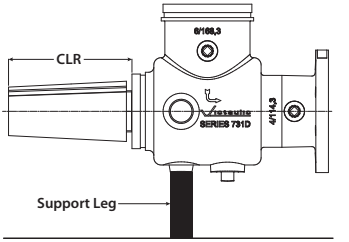
Nominal JIS Suction Diffuser Size mm/inches			Dimensions – mm/inches	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
350A 14	×	250A 10	737 29.00	559 22.00
		300A 12	737 29.00	559 22.00
		350A 14	737 29.00	559 22.00
400A 16	×	300A 12	914 36.00	635 25.00
		350A 14	914 36.00	635 25.00
		400A 16	914 36.00	635 25.00
450A 18	×	350A 14	991 39.00	711 28.00
		400A 16	991 39.00	711 28.00
		450A 18	991 39.00	711 28.00
500A 20	×	400A 16	1092 43.00	762 30.00
		450A 18	1092 43.00	762 30.00
		500A 20	1092 43.00	762 30.00
600A 24	×	450A 18	1194 47.00	864 34.00
		500A 20	1194 47.00	864 34.00
		600A 24	1194 47.00	864 34.00

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

AGS ACCESSORIES FOR AGS GROOVED-END PIPE

Series W731-D – AGS Suction Diffuser with AS Table "E" Flange





Nominal Suction Diffuser Size DN/inches			Dimensions – mm/inches	
Inlet	x	Outlet	OAL Overall Length	CLR Basket Clearance
DN350 14	×	DN250 10	737 29.00	559 22.00
		DN300 12	737 29.00	559 22.00
		DN350 14	737 29.00	559 22.00
DN400 16	×	DN300 12	914 36.00	635 25.00
		DN350 14	914 36.00	635 25.00
		DN400 16	914 36.00	635 25.00
DN450 18	×	DN350 14	991 39.00	711 28.00
		DN400 16	991 39.00	711 28.00
		DN450 18	991 39.00	711 28.00
DN500 20	×	DN400 16	1092 43.00	762 30.00
		DN450 18	1092 43.00	762 30.00
		DN500 20	1092 43.00	711 30.00
DN600 24	x	DN450 18	1194 47.00	864 34.00
		DN500 20	1194 47.00	864 34.00
		DN600 24	1194 47.00	864 34.00

For the most up-to-date dimensional information, always refer to the current Victaulic product publication, which can be downloaded at victaulic.com.

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