

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

STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

⚠ WARNING

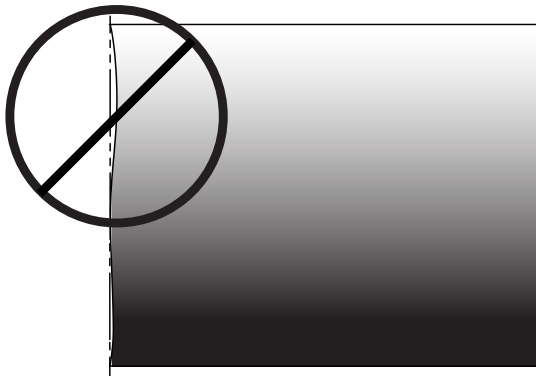


- Read and understand all instructions before attempting to install any Victaulic piping products.
 - These products must be used only on pipe that is direct-grooved to Victaulic Advanced Groove System (AGS) specifications using Victaulic AGS (RW or RWX) roll sets or pipe that is prepared with AGS Vic-Rings. DO NOT attempt to assemble these products on pipe that is direct-grooved with original-type grooving roll sets.
 - Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
 - Wear safety glasses, hardhat, and foot protection during installation.
- Failure to follow these instructions could result in serious personal injury, improper product installation, and/or property damage.

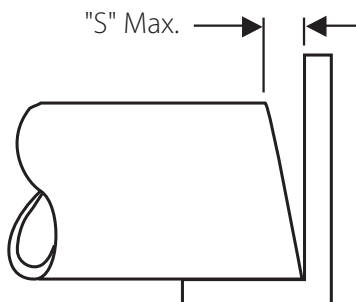
The information contained in this instruction sheet must be referenced to ensure proper installation of Style W07 AGS Rigid Couplings and Style W77/W77N AGS Flexible Couplings. Style W07 and Style W77/W77N AGS Couplings require pipe or Vic-Rings that are prepared with a grooving technology called the Victaulic Advanced Groove System (AGS). When direct-grooving pipe, Victaulic AGS (RW or RWX) roll sets are required to produce grooves in accordance with this technology. The following instructions must be referenced for complete pipe preparation and coupling assembly requirements.

PIPE END INSPECTION FOR **AGS** COUPLINGS – ALL SIZES

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

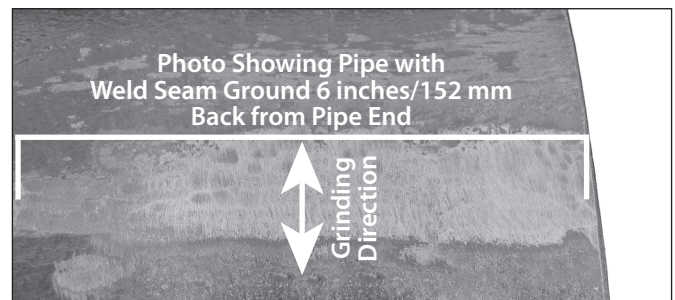


2. The front edge of the pipe end shall be uniform with no concave/convex surface features (refer to the drawing above for an unacceptable pipe end). These features will cause improper grooving roll tracking, resulting in difficult coupling assembly.
3. If pipe cut-off is required, Victaulic recommends the use of a mechanically-guided pipe cutting tool for proper pipe end preparation. Free-hand pipe end cutting is not acceptable.



4. Square cut the pipe ends ("S" dimension shown above) within 1/8 inch/3.2 mm.

PIPE PREPARATION FOR **AGS** COUPLINGS (DIRECT-GROOVED APPLICATIONS) – ALL SIZES



1. Prior to grooving, weld seams must be ground flush to the pipe surface (inside diameter and 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 must be smooth and free from indentations, projections, and roll marks to ensure a leak-tight seal. Pipe with external, axial weld seams can be supported with Victaulic Adjustable Pipe Stands. However, the weld seam must be smooth and rounded and at least three times as wide as it is high. The weld seam must not exceed 1/8 inch/3 mm in height.
- 1a. Groove the pipe in accordance with the AGS grooving specifications listed in Victaulic publication 25.09. **NOTE: USE VICTAULIC AGS RW ROLL SETS FOR STANDARD-WEIGHT CARBON STEEL AND STAINLESS STEEL PIPE OR AGS RWX ROLL SETS SPECIFICALLY FOR LIGHT-WALL STAINLESS STEEL PIPE.**



- 1b. Clean the outside surface of the pipe, from the groove to the pipe end, to remove all oil, grease, loose paint, and dirt.

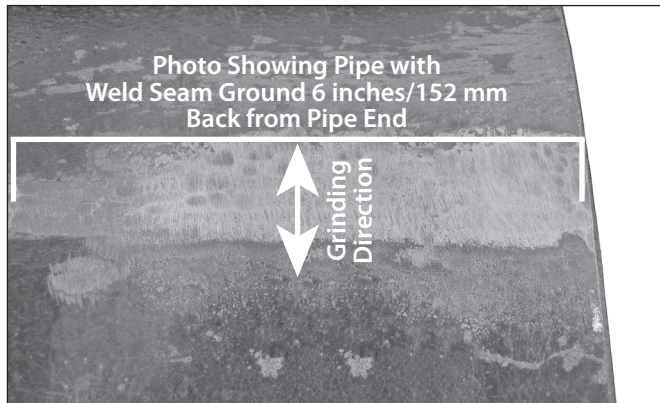
Advanced Groove System **AGS**® Couplings for Direct-Grooved Pipe or **AGS**® Vic-Ring® Applications

STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

AGS® VIC-RING® APPLICATION INFORMATION

Style W07 AGS Rigid Couplings in 14 – 48-inch/355.6 – 1219-mm sizes and Style W77/W77N AGS Flexible Couplings in 14 – 60-inch/355.6 – 1524-mm sizes can be installed on carbon steel pipe that is prepared with AGS Vic-Rings. Vic-Rings must be welded to the pipe ends in accordance with current Victaulic specifications (refer to pipe preparation requirements on this page).

PIPE PREPARATION FOR STYLES W07 AND W77/W77N **AGS**® COUPLINGS (**AGS**® VIC-RING® APPLICATIONS) – ALL SIZES



1. Prior to welding a Vic-Ring onto the pipe end, weld seams must 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 must be smooth and free from indentations, projections, and roll marks.

1a. Weld the Vic-Ring onto the pipe end per the specifications listed in Victaulic publication 16.11 for Style W07 Rigid Couplings or 16.12 for Style W77/W77N Flexible Couplings.



1b. Clean the outside surface of the Vic-Rings to remove dirt and other foreign material.

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STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

INSTALLATION INSTRUCTIONS – 24-INCH/610-MM AND SMALLER SIZES

NOTICE

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

⚠ WARNING

- DO NOT** attempt to assemble Style W07 or Style W77 AGS Couplings on pipe that is direct-grooved with original-type grooving roll sets.
- Failure to follow this instruction will cause improper assembly and joint failure, resulting in serious personal injury and/or property damage.

STYLES 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 the pipe by following the appropriate “Pipe End Inspection” and “Pipe Preparation” sections on page 1 or 2.



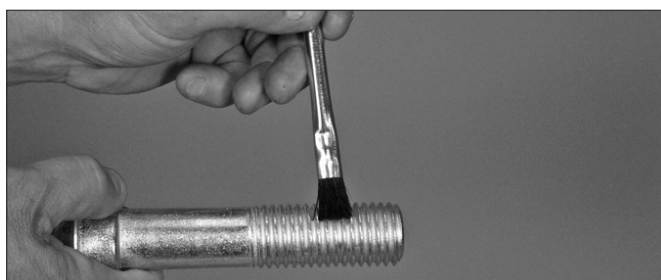
2. CHECK GASKET: Check the gasket to make sure it is suitable for the intended service. The color code identifies the gasket grade. Apply a thin coat of Victaulic lubricant or silicone lubricant to the gasket lips, gasket exterior, and the interior surface of both coupling housings.



3. POSITION GASKET: Position the gasket over the pipe end or AGS Vic-Ring. Make sure the gasket does not overhang the pipe end or AGS Vic-Ring.



4. JOIN PIPE ENDS: Align and bring the two pipe ends together. Slide the gasket into position, and center it between the groove in each pipe end or AGS Vic-Ring.



5. LUBRICATE BOLT THREADS: Apply a thin coat of Victaulic lubricant or silicone lubricant to the bolt threads. **NOTE:** If stainless steel bolts and nuts are special ordered, apply an anti-seize compound to the bolt threads.

⚠ CAUTION

- Make sure the gasket does not become rolled or pinched while installing the housings.

Failure to follow these instructions could cause damage to the gasket, resulting in joint leakage.



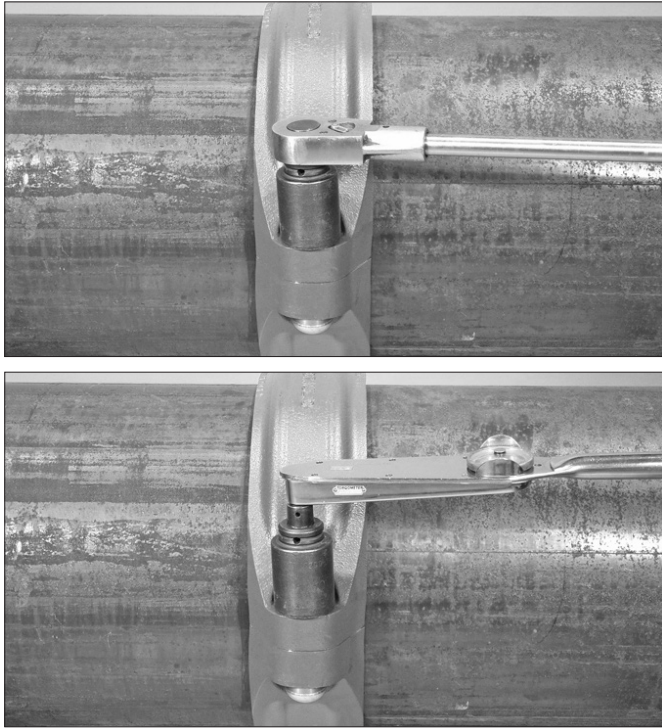
6. INSTALL HOUSINGS: Install the housings over the gasket. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring. Support the segments while preparing to install the bolts and nuts.

6a. INSTALL BOLTS/NUTS: Install the bolts, and thread a nut finger-tight onto each bolt. **NOTE:** Make sure the oval neck of each bolt seats properly in the bolt hole.

FOR 22-INCH/559-MM STYLE W07 AND STYLE W77 COUPLINGS WITH STAINLESS STEEL FASTENERS: A washer must be installed under each nut.

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7. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring. **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 Assembly Torques" table on this page.

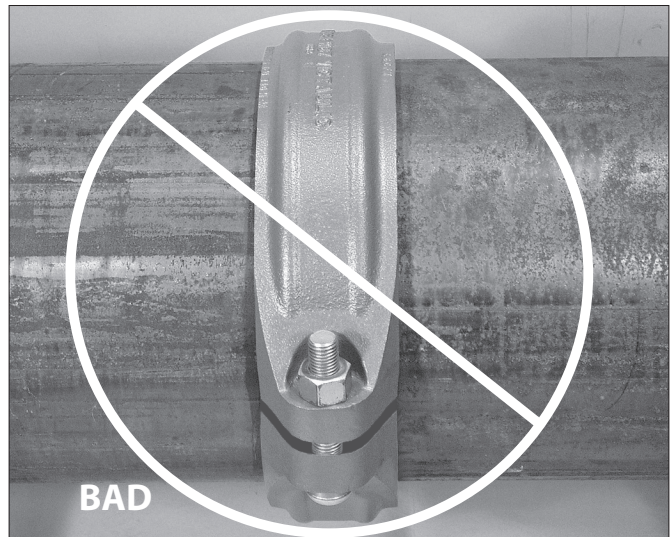
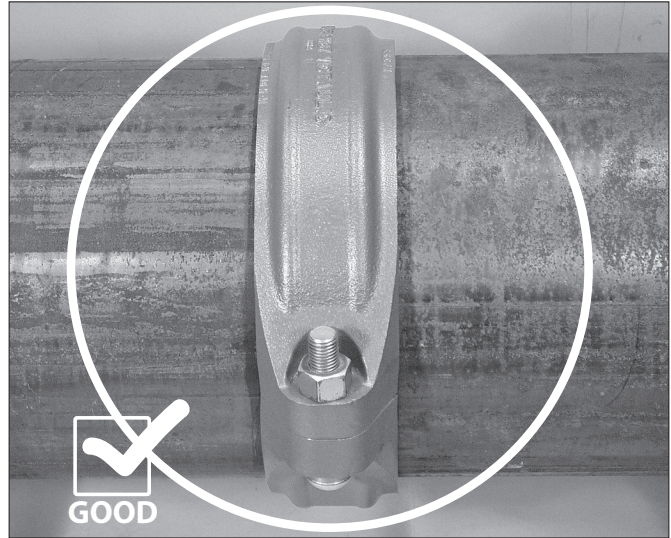
NOTE: It is important to tighten the nuts evenly by alternating sides to prevent gasket pinching. Deep well sockets are recommended for proper installation due to the longer bolt lengths associated with these products. Deep well sockets provide the full nut engagement that is necessary during tightening.

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 PIPE END OR AGS VIC-RING.

WARNING

- For proper assembly, the nuts must be tightened evenly until metal-to-metal contact occurs at the bolt pads and the required torque values, listed in these instructions, are achieved.
- Always bring the bolt pads into metal-to-metal contact immediately after assembling the coupling onto the pipe end or AGS Vic-Ring.
- Keep hands away from coupling openings during tightening.

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



8. Visually inspect the bolt pads at each joint to ensure metal-to-metal contact is achieved across the entire bolt pad section.

Required Assembly Torques

Size		Required Torques
Nominal Size inches	Actual Pipe Outside Diameter inches/mm	ft-lbs (N•m)
14 – 18	14.000 – 18.000	250
	355.6 – 457	340
20 – 24	20.000 – 24.000	375
	508 – 610	500

Style W07 and W77 Helpful Information

Size		Number of Bolts/Nuts	Nut Size	Socket Size
Nominal Size inches	Actual Pipe Outside Diameter inches/mm		inches/Metric	inches/mm
14 – 18	14.000 – 18.000	2	1	1 5/8
	355.6 – 457		M24	41
20 – 24	20.000 – 24.000	2	1 1/8	1 13/16
	508 – 610		M27	46

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

STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

INSTALLATION INSTRUCTIONS – 26 – 60-INCH/660 – 1524-MM SIZES

NOTICE

- The following installation steps feature photos of a Style W07 AGS Rigid Coupling on direct-grooved pipe. However, the same steps apply to installation of Style W77/W77N AGS Flexible Couplings on direct-grooved pipe and installation of Styles W07 and W77/W77N Couplings on pipe prepared with AGS Vic-Rings.

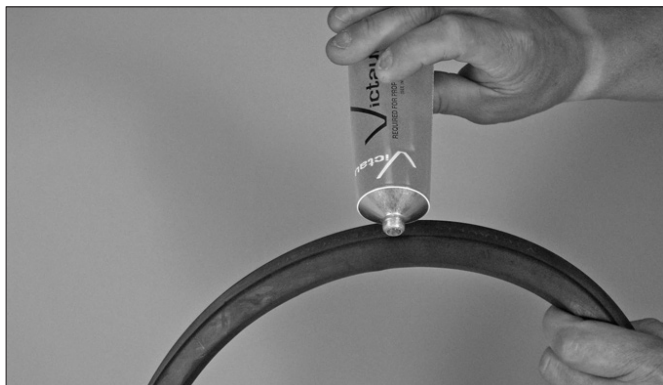
⚠ WARNING

- DO NOT attempt to assemble Style W07 or Style W77/W77N AGS Couplings on pipe that is direct-grooved with original-type grooving roll sets.

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

STYLES W07 AND W77/W77N 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 the pipe by following the appropriate “Pipe End Inspection” and “Pipe Preparation” sections on page 1 or 2.



2. CHECK GASKET AND LUBRICATE: Check the gasket to make sure it is suitable for the intended service. The color code identifies the gasket grade. Apply a thin coat of Victaulic lubricant or silicone lubricant to the gasket lips, gasket exterior, and the interior surface of the coupling housings.



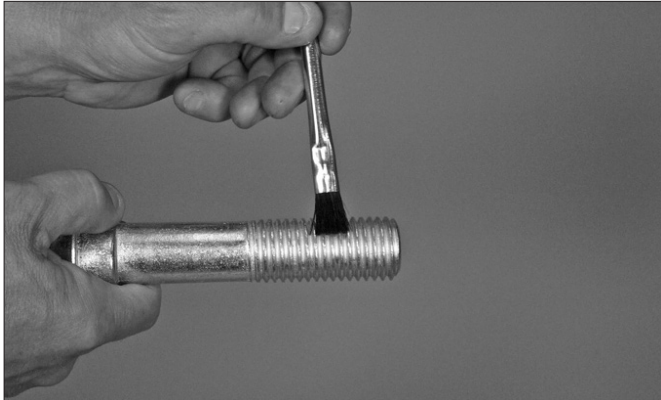
3. POSITION GASKET: Position the gasket over the pipe end or AGS Vic-Ring. Make sure the gasket does not overhang the pipe end or AGS Vic-Ring.



4. JOIN PIPE ENDS: Align and bring the two pipe ends together. Slide the gasket into position, and center it between the groove in each pipe end or AGS Vic-Ring.

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5. LUBRICATE BOLT THREADS: Apply a thin coat of Victaulic lubricant or silicone lubricant to the bolt threads. **NOTE:** If stainless steel bolts and nuts are special ordered, apply an anti-seize compound to the bolt threads.

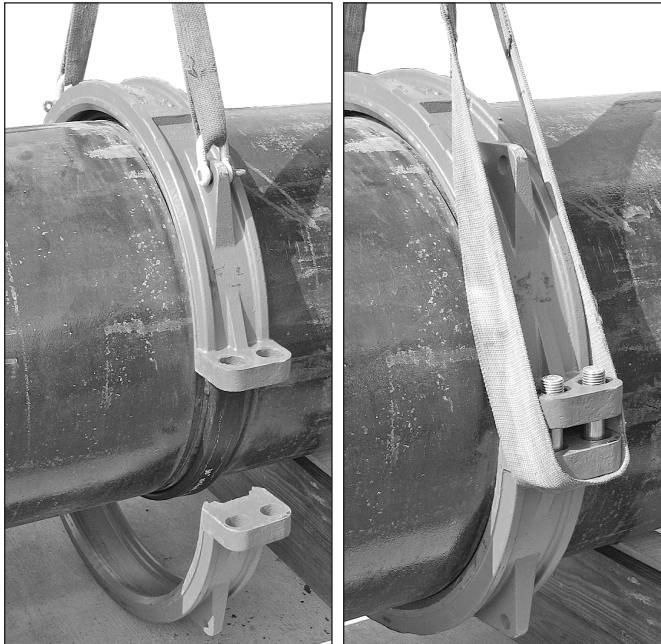
NOTICE

- Lifting lugs are provided on the coupling housings to aid in assembly. Due to the weight of the coupling housings, mechanical lifting equipment is strongly recommended.

CAUTION

- Make sure the gasket does not become rolled or pinched while installing the housings.

Failure to follow these instructions could cause damage to the gasket, resulting in joint leakage.



6. INSTALL HOUSINGS: Using a strapping method, similar to the one shown in the photos above with the bolts installed in the bolt holes, install the housings over the gasket. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring.



6a. INSTALL FLAT WASHERS/NUTS: Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight onto each bolt. **NOTE:** Make sure the oval neck of each bolt seats properly in the bolt hole.



7. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides (refer to the graphics on page 8 for the tightening sequence). Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring. **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 Assembly Torques" table on the following page.

NOTE: It is important to tighten the nuts evenly by alternating sides to prevent gasket pinching. Deep well sockets are recommended for proper installation due to the longer bolt lengths associated with these products. Deep well sockets provide the full nut engagement that is necessary during tightening.

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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 PIPE END OR AGS VIC-RING.

WARNING

- Nuts must be tightened evenly 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 the pipe end or AGS Vic-Ring.
- Keep hands away from coupling openings during tightening.

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

Styles W07 and W77 Required Assembly Torques

Size		Required Torques
Nominal Size inches	Actual Pipe Outside Diameter inches/mm	ft-lbs (N•m)
26 – 28	26.000 – 28.000	375
	660 – 711	500
30 – 38	30.000 – 38.000	500
	762 – 965	678
40 – 50	40.000 – 50.000	600
	1016 – 1270	814

Styles W77N Required Assembly Torques

Size		Required Torques
Nominal Size inches	Actual Pipe Outside Diameter inches/mm	ft-lbs (N•m)
54 – 60	54.000 – 60.000	600
	1372 – 1524	814

Styles W07 and W77 Helpful Information

Size		Number of Bolts/Nuts/ Washers	Nut Size	Socket Size
Nominal Size inches	Actual Pipe Outside Diameter inches/mm		inches/ Metric	inches/ mm
26 – 28	26.000 – 28.000	4	1 1/8	1 13/16
	660 – 711		M27	46
30 – 38	30.000 – 38.000	4	1 1/4	2
	762 – 965		M30	50
40 – 50	40.000 – 50.000	4	1 1/2	2 3/8
	1016 – 1270		M36	60

Style W77N Helpful Information

Size		Number of Bolts/Nuts/ Washers	Nut Size	Socket Size
Nominal Size inches	Actual Pipe Outside Diameter inches/mm		inches/ Metric	inches/ mm
54 – 60	54.000 – 60.000	4	1 1/2	2 3/8
	1372 – 1524		M36	60

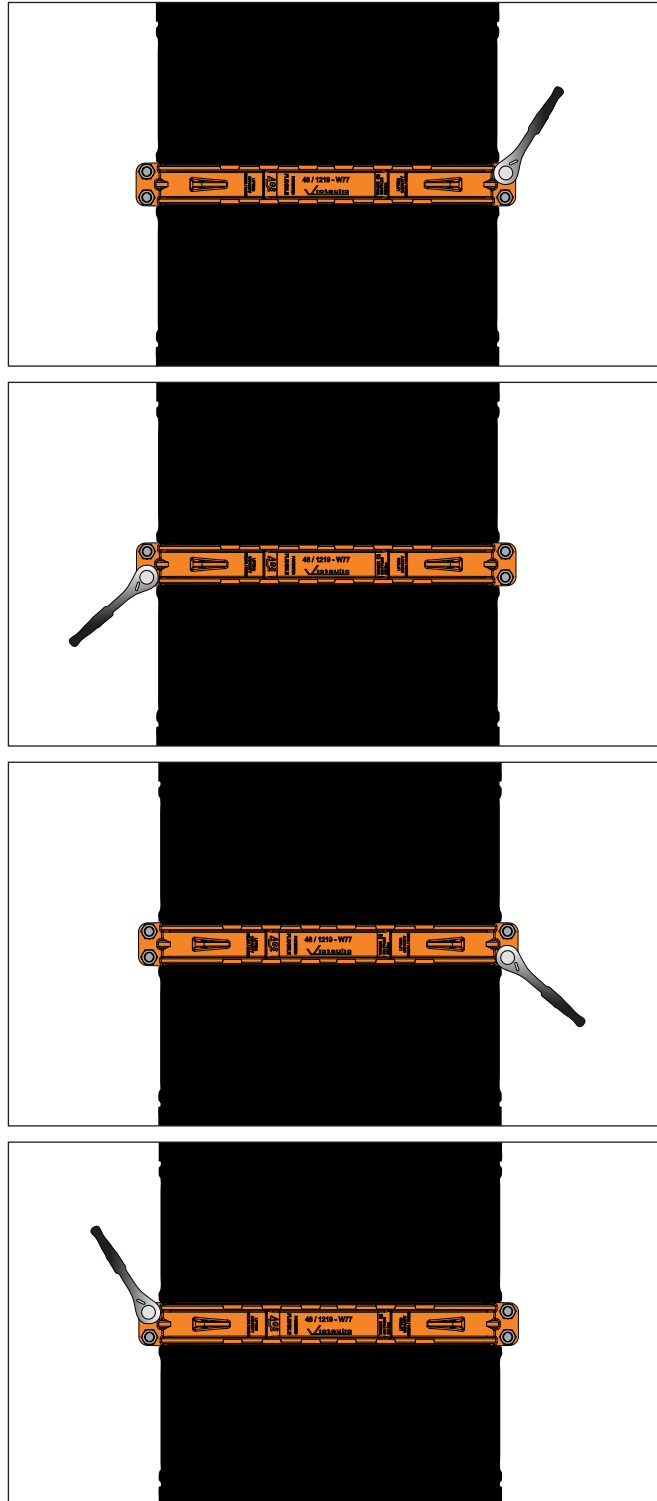


8. Visually inspect the bolt pads at each joint to ensure metal-to-metal contact is achieved across the entire bolt pad section.

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TIGHTENING SEQUENCE



Repeat the tightening sequence shown above until the installation requirements in Step 7 on page 6 are achieved.

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

STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

INSTALLATION INSTRUCTIONS – 62-INCH/1575-MM AND LARGER SIZES

NOTICE

- The following installation steps feature photos of a Style W77N AGS Flexible Coupling on direct-grooved pipe. However, the same steps apply to installation of Style W77N AGS Flexible Couplings on pipe prepared with AGS Vic-Rings.
- Style W77N Couplings in 62-inch/1575-mm and larger sizes are cast in four segments for ease of handling.

WARNING

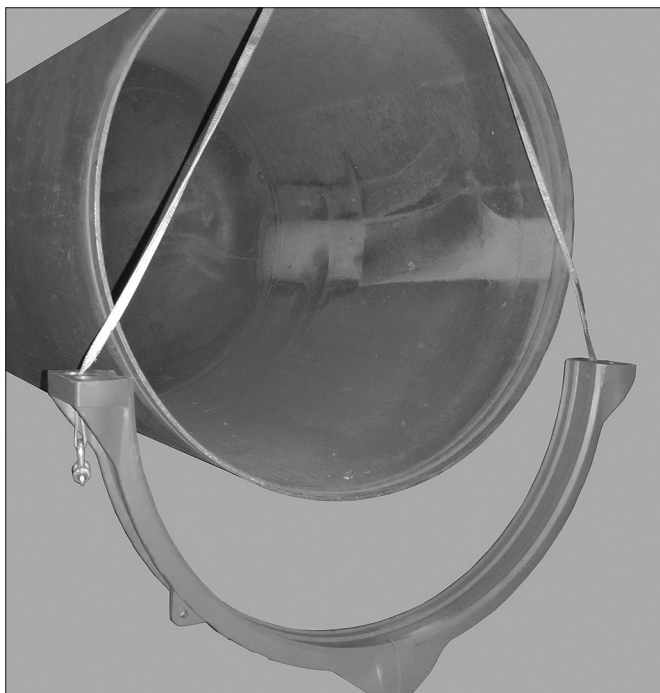
- DO NOT attempt to assemble Style W77N AGS Couplings on pipe that is direct-grooved with original-type grooving roll sets. Failure to follow this instruction will cause improper assembly and joint failure, resulting in serious personal injury and/or property damage.

STYLE W77N COUPLINGS HAVE A TORQUE REQUIREMENT. REFER TO THE INSTRUCTIONS ON THE FOLLOWING PAGES OR THE MARKINGS ON THE HOUSINGS FOR THE TORQUE REQUIREMENT.

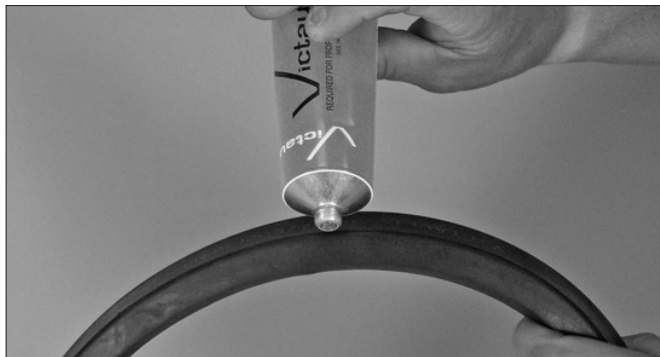
1. Prepare the pipe by following the appropriate “Pipe End Inspection” and “Pipe Preparation” sections on page 1 or 2.



2. ASSEMBLE SEGMENTS: Assemble segments into two halves, as shown above. Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight onto each bolt. **NOTE:** Make sure 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, then back the nut off a quarter turn.



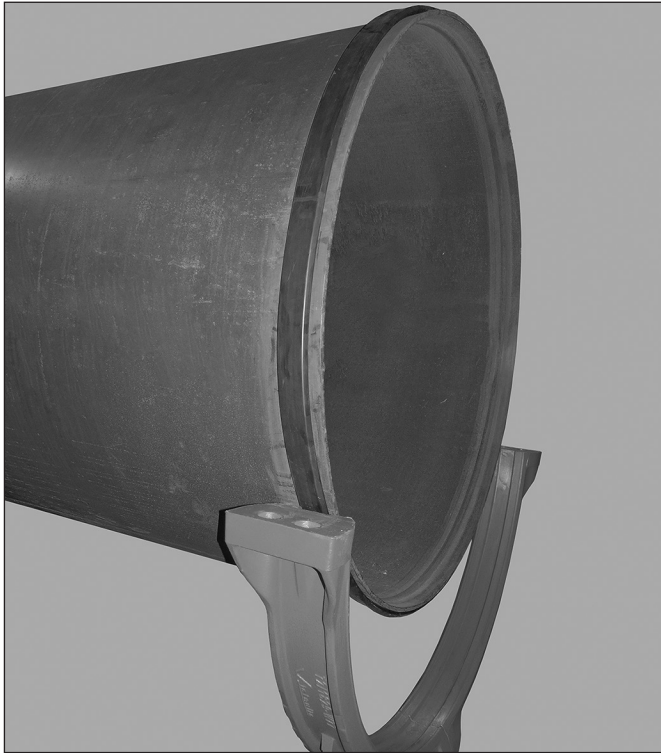
3. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method, similar to the one shown in the above photo, move the lower segment assembly into position underneath the pipe end.



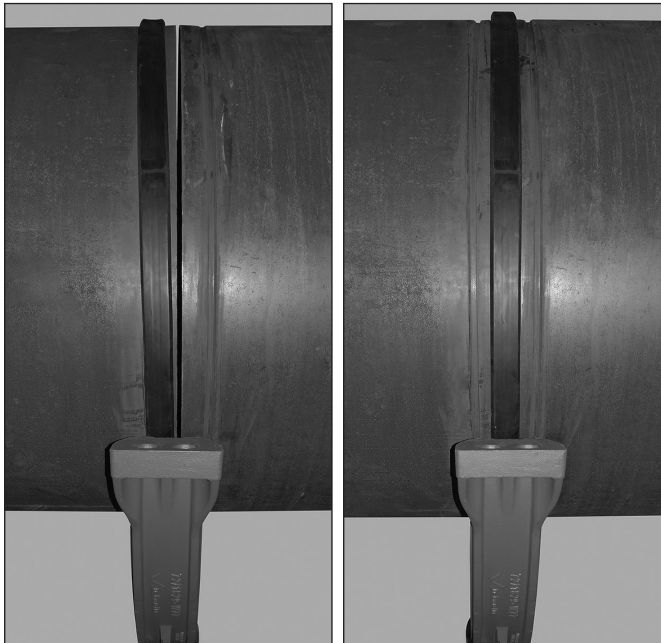
4. CHECK GASKET AND LUBRICATE: Check the gasket to make sure it is suitable for the intended service. The color code identifies the gasket grade. Apply a thin coat of Victaulic lubricant or silicone lubricant to the gasket lips, gasket exterior, and the interior surface of the coupling housings. Apply extra lubricant to the bolt pad mating areas, as shown.

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STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE



5. POSITION GASKET: Position the gasket over the pipe end or AGS Vic-Ring. Make sure the gasket does not overhang the pipe end or AGS Vic-Ring.



6. JOIN PIPE ENDS: Align and bring the two pipe ends together. Slide the gasket into position, and center it between the groove in each pipe end or AGS Vic-Ring.

NOTICE

- Lifting lugs are provided on the coupling housings to aid in assembly. Due to the weight of the coupling housings, mechanical lifting equipment is required.

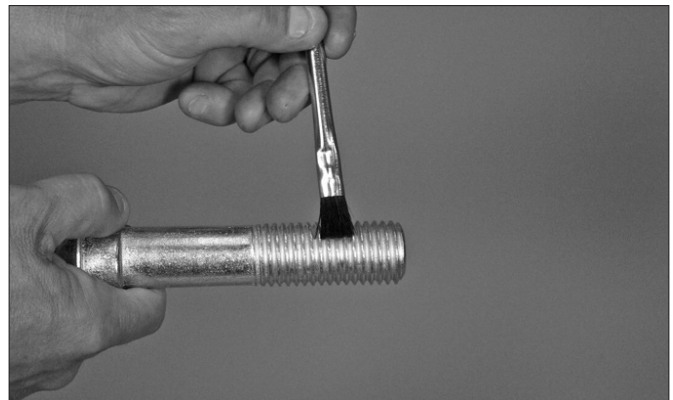
CAUTION

- Make sure the gasket does not become rolled or pinched while installing the housings.

Failure to follow these instructions could cause damage to the gasket, resulting in joint leakage.



7. MOVE UPPER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method, similar to the one shown in the above photo, install the upper segment assembly over the gasket. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring.



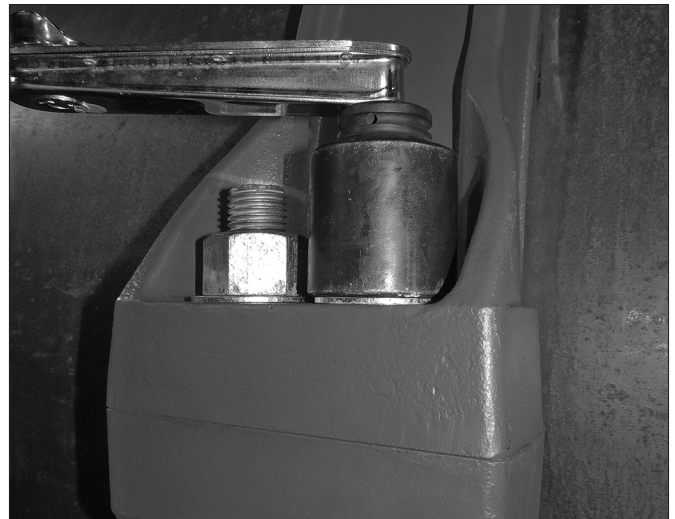
8. LUBRICATE BOLT THREADS: Apply a thin coat of Victaulic lubricant or silicone lubricant to the bolt threads. **NOTE:** If stainless steel bolts and nuts are special ordered, apply an anti-seize compound to the bolt threads.

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9. RAISE THE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method, similar to the one shown in the above photo, raise the lower segment assembly. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring.



10. INSTALL BOLTS/FLAT WASHERS/NUTS: Insert the bolts. Install a washer onto the end of each bolt, and thread a nut onto each bolt finger-tight. **NOTE:** Make sure the oval neck of each bolt seats properly in the bolt hole.

10a. TIGHTEN NUTS: Tighten the nuts evenly by alternating bolt pads. Make sure the housings' keys engage the groove completely in each pipe end or AGS Vic-Ring. **Continue to tighten the nuts evenly by alternating bolt pads until metal-to-metal bolt pad contact AND the specified torque value are achieved at each bolt pad.** Refer to the "Required Assembly Torques" table on the following page.

NOTE: It is important to tighten the nuts evenly by alternating bolt pads to prevent gasket pinching. Deep well sockets are recommended for proper installation due to the longer bolt lengths associated with these products. Deep well sockets provide the full nut engagement that is necessary during tightening.

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 PIPE END OR AGS VIC-RING.

Instructions continue on the following page.

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STYLE W07 RIGID AND STYLES W77/W77N FLEXIBLE

⚠ WARNING

- Nuts must be tightened evenly 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 the pipe end or AGS Vic-Ring.
- Keep hands away from coupling openings during tightening.

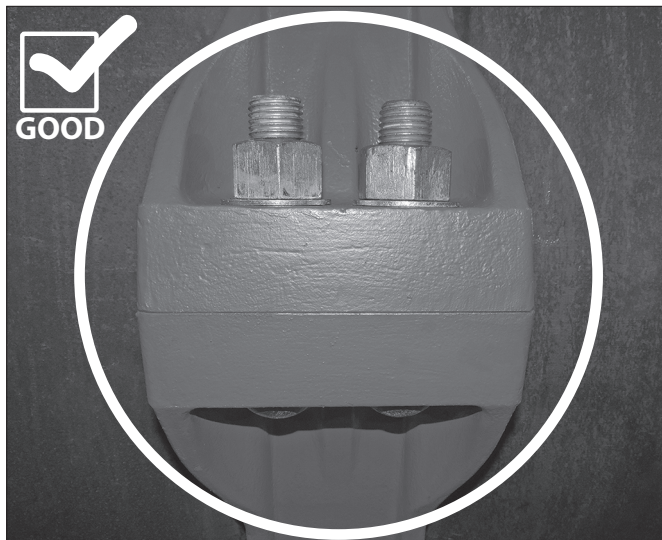
Failure to follow these instructions could cause joint failure, resulting in serious personal injury and/or property damage.

Style W77N Required Assembly Torque

Size		Required Torque
Nominal Size inches	Actual Pipe Outside Diameter inches/mm	ft-lbs (N•m)
62 – 72	62.000 – 72.000 1575 – 1829	600 814

Style W77N Helpful Information

Size		Number of Bolts/Nuts/Washers	Nut Size	Socket Size
Nominal Size inches	Actual Pipe Outside Diameter inches/mm		inches/Metric	inches/mm
62 – 72	62.000 – 72.000 1575 – 1829	8	1 ½ M36	2 ¾ 60



11. Visually inspect the bolt pads at each joint to ensure metal-to-metal contact is achieved across the entire bolt pad section.

For complete contact information, visit victaulic.com

I-W07/W77/W77N 3993 REV H UPDATED 12/2013 Z000W07W77

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I-W07/W77/W77N

