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

STYLE W07 RIGID AND STYLES W77/W77B/W77N FLEXIBLE

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, and foot protection.

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

The information contained in this instruction sheet shall be referenced for pipe preparation and installation requirements for Style W07 Advanced Groove System (AGS) Rigid Couplings and Style W77/W77B/W77N AGS Flexible Couplings.

When direct-grooving pipe for use with Style W07 and Style W77/W77N AGS Couplings, Victaulic AGS (RW or RWX) roll sets are required. **DO NOT** attempt to assemble Style W07 and Style W77/W77N AGS Couplings on pipe that is direct grooved with Original Groove System (OGS) roll sets.

For Vic-Ring applications, Type “B” or Type “D” AGS Vic-Rings are required for use with Style W07 and Style W77/W77B/W77N AGS Couplings.

PIPE END INSPECTION AND PREPARATION – 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 1/8 inch/3.2 mm. This is measured from the true square line. Beveled-end pipe may be used, provided that the wall thickness is standard wall (0.375 inch/9.5 mm) 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. The external axial weld seam 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.

4a. 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.

4b. 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.

5. 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.

6. Groove the pipe in accordance with 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.

7. 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

NOTICE

- It is the welder’s responsibility to ensure Vic-Rings are welded correctly to the pipe, in accordance with proper welding practices and in conformance with the Vic-Ring Weldment submittal drawing(s) provided for the specific project.

Photo Showing Pipe with Weld Seam Ground 6 inches/152 mm Back from Pipe End

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.

2a. 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 or 16.12 for Style W77/W77B/W77N Flexible Couplings.

2b. Clean the outside surface of the Vic-Rings to remove dirt and other foreign material.

INSTALLATION INSTRUCTIONS –
24-INCH/DN600 AND SMALLER SIZES

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

- DO NOT attempt to assemble Style W07 or W77 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 serious personal injury and property damage.

STORY 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 sections on page 1 or 2. 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 prevent 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. Refer to Victaulic publication 05.01 for the color code chart, which can be downloaded at victaulic.com.

2b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, such as 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 pipe end or AGS Vic-Ring. Verify that the gasket does not overhang the pipe end or AGS Vic-Ring.
4. JOIN PIPE ENDS OR AGS VIC-RINGS: Align and bring the two pipe ends or AGS Vic-Rings 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 grease to the bolt threads. NOTE: If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads.

**CAUTION**

- Verify that 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.

6a. INSTALL HOUSINGS: Install the housings over the gasket. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring. Maintain support of the housings while preparing to install bolts and nuts.

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

FOR 22-INCH/DN550 STYLE W07 AND STYLE W77 COUPLINGS WITH STAINLESS STEEL FASTENERS: A washer shall be installed under each nut.

6c. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides. 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 and Helpful Information” table on this 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 PIPE END OR AGS VIC-RING.**

**WARNING**

- Nuts shall be tightened evenly by alternating sides 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 instructions for tightening coupling hardware could result in:
- Personal injury or death
- Joint leakage and property damage
- A negative impact on system integrity

7. 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 6c on this page.

### Required Assembly Torques and Helpful Information

<table>
<thead>
<tr>
<th>Nominal Coupling Size inches/DN</th>
<th>Actual Pipe Outside Diameter inches/mm</th>
<th>Required Torques ft-lbs/N•m</th>
<th>Number of Bolts/Nuts</th>
<th>Nut Size inches/Metric</th>
<th>Socket Size inches/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 – 18 DN350 – DN450</td>
<td>14.000 – 18.000</td>
<td>250</td>
<td>2</td>
<td>M24</td>
<td>1 1/4</td>
</tr>
<tr>
<td></td>
<td>355.6 – 457.0</td>
<td></td>
<td></td>
<td></td>
<td>1 1/4</td>
</tr>
<tr>
<td></td>
<td>14.843 – 18.898</td>
<td>250</td>
<td>2</td>
<td>M24</td>
<td>1 1/4</td>
</tr>
<tr>
<td></td>
<td>377.0 – 480.0</td>
<td></td>
<td></td>
<td></td>
<td>1 1/4</td>
</tr>
<tr>
<td>20 – 24 DN500 – DN600</td>
<td>20.000 – 24.000</td>
<td>375</td>
<td>2</td>
<td>M24</td>
<td>1 1/4</td>
</tr>
<tr>
<td></td>
<td>508.0 – 610.0</td>
<td></td>
<td></td>
<td></td>
<td>1 1/4</td>
</tr>
</tbody>
</table>

**GOOD**  **BAD**
INSTALLATION INSTRUCTIONS – 26 – 60-INCH/DN650 – DN1500 SIZES

- Style W07 AGS Rigid Coupling (26 – 50-inch/DN650 – DN1250 Sizes)
- Style W77 AGS Flexible Coupling (26 – 50-inch/DN650 – DN1250 Sizes)
- Style W77N AGS Flexible Coupling (54 – 60-inch/DN1350 – DN1500 Sizes)

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/W77N AGS Flexible Couplings on AGS direct-grooved pipe and installation of Style W07 and W77/W77N Couplings on pipe prepared with AGS Vic-Rings.

WARNING

- DO NOT attempt to assemble Style W07 or W77/W77N 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 serious personal injury and property damage.

STYLE 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 PIPE: Prepare the pipe by following the appropriate sections on page 1 or 2. 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 prevent 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. Refer to Victaulic publication 05.01 for the color code chart, which can be downloaded at victaulic.com.

2b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, such as 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 pipe end or AGS Vic-Ring. Verify that the gasket does not overhang the pipe end or AGS Vic-Ring.

4a. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Move the lower segment assembly into position underneath the pipe end or AGS Vic-Ring.

4b. JOIN PIPE ENDS OR AGS VIC-RINGS: Align and bring the two pipe ends or AGS Vic-Rings together. Slide the gasket into position and center it between the groove in each pipe end or AGS Vic-Ring. The gasket shall fit snug to the pipe end or AGS Vic-Ring. No gaps/sags shall be present between the gasket sealing lips and outside diameter of the pipe end or AGS Vic-Ring.
5. LUBRICATION BOLT THREADS: Apply a thin coat of Victaulic Lubricant or silicone grease to the bolt threads. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads.

### **WARNING**

- 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 use mechanical lifting equipment could result in death or serious personal injury and property damage.

### **CAUTION**

- Verify that 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 examples shown above with a bolt installed in each bolt hole, install the housings over the gasket. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring. Maintain support of the housings while preparing to install flat washers and nuts.

7a. 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:** Verify that the oval neck of each bolt seats properly in the bolt hole.

7b. TIGHTEN NUTS: Tighten the nuts evenly by alternating sides (refer to the graphics on the following page for the tightening sequence). 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 and Helpful Information” 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 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 PIPE END OR AGS VIC-RING.**

### **WARNING**

- Nuts shall be tightened evenly by alternating sides 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 instructions for tightening coupling hardware could result in:
- Personal injury or death
- Joint leakage and property damage
- A negative impact on system integrity
TIGHTENING SEQUENCE

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

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 7b on the previous page.

Required Assembly Torques and Helpful Information

<table>
<thead>
<tr>
<th>Nominal Coupling Size inches/DN</th>
<th>Actual Pipe Outside Diameter inches/mm</th>
<th>Required Torques ft-lbs/N•m</th>
<th>Number of Bolts/Nuts</th>
<th>Nut Size inches/Metric</th>
<th>Socket Size inches/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 – 28 DN650 – DN700</td>
<td>26.000 – 28.000</td>
<td>375</td>
<td>4</td>
<td>1 1/8</td>
<td>1 13/16</td>
</tr>
<tr>
<td>30 – 38 DN750 – DN950</td>
<td>30.000 – 38.000</td>
<td>500</td>
<td>4</td>
<td>1 1/4</td>
<td>2</td>
</tr>
<tr>
<td>40 – 60 DN1000 – DN1500</td>
<td>40.000 – 50.000</td>
<td>600</td>
<td>4</td>
<td>1 1/2</td>
<td>2 3/8</td>
</tr>
</tbody>
</table>
INSTALLATION INSTRUCTIONS –
62-INCH/DN1550 AND LARGER SIZES
• Style W77N AGS Flexible Coupling

NOTICE
• The following installation steps feature photos of a Style W77N AGS Flexible Coupling on AGS direct-grooved pipe. Note that the same steps apply to installation of Style W77N AGS Flexible Couplings on pipe prepared with AGS Vic-Rings.
• Style W77N Couplings for 62-inch/DN1550 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 OGS roll sets.
Failure to follow this instruction will cause improper assembly and joint failure, resulting in serious personal injury and 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 PIPE: Prepare the pipe by following the appropriate sections on page 1 or 2. Support both pipe lengths securely. Pipe support shall be maintained throughout the entire installation procedure.

2. LUBRICATE BOLT THREADS: Apply a thin coat of Victaulic lubricant or silicone grease to the bolt threads. NOTE: If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads.

3. ASSEMBLE SEGMENTS: Install a bolt into each hole location at the bolt pads. Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight 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.

4a. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. Refer to Victaulic publication 05.01 for the color code chart, which can be downloaded at victaulic.com.

4b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, such as Victaulic lubricant or silicone grease, to the gasket sealing lips, gasket exterior, and the interior surface of each coupling housing (silicone spray is not a compatible lubricant). Apply extra lubricant to the bolt pad mating areas.

NOTICE
• 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 prevent pinching, rolling, or tearing during installation.
Failure to use a compatible lubricant may cause gasket damage, resulting in joint leakage and property damage.

4. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION:

5a. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method similar to the one shown in the above photo, move the lower, fully-tightened segment assembly into position underneath the pipe end or AGS Vic-Ring.

5b. POSITION GASKET: Position the gasket over the pipe end or AGS Vic-Ring. Verify that the gasket does not overhang the pipe end or AGS Vic-Ring.

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.
6. JOIN PIPE ENDS OR AGS VIC-RINGS: Align and bring the two pipe ends or AGS Vic-Rings together. Slide the gasket into position and center it between the groove in each pipe end or AGS Vic-Ring. The gasket shall fit snug to the pipe end or AGS Vic-Ring. No gaps/sags shall be present between the gasket sealing lips and outside diameter of the pipe end or AGS Vic-Ring.

**WARNING**
- 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 use mechanical lifting equipment could result in death or serious personal injury and property damage.

**CAUTION**
- Verify that 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. INSTALL UPPER, LOOSENED SEGMENT ASSEMBLY: Using a strapping method similar to the examples shown above, install the upper, loosened segment assembly over the gasket. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring.

8. 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. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring. Maintain support of the housings while preparing to install the remaining sets of hardware.

**NOTE:** As the lower segment assembly is being raised, verify that the gasket is not becoming pinched between the bolt pads. A gasket that is being pinched shall be replaced with a new gasket before proceeding any further with installation.

9. LUBRICATE REMAINING BOLT THREADS: Apply a thin coat of Victaulic lubricant or silicone grease to the remaining bolt threads.

**NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt threads.
10a. INSTALL BOLTS/FLAT WASHERS/NUTS: Install a bolt into each hole location at the two remaining bolt pads. Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight onto each bolt. Verify that the oval neck of each bolt seats properly in the bolt hole.

10b. START WITH TIGHTENING HARDWARE AT 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.

10c. CONTINUE WITH TIGHTENING HARDWARE AT ALL BOLT PAD LOCATIONS: Continue by tightening the hardware evenly by alternating all bolt pad locations until metal-to-metal bolt pad contact AND the specified torque value are achieved at all bolt pad locations. Refer to the “Required Assembly Torques and Helpful Information” table on the following page.

NOTE: It is important to tighten all nuts evenly by alternating bolt pad locations to prevent gasket pinching. 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 THE AGS VIC-RING.

**WARNING**

- Nuts shall be tightened evenly by alternating all bolt pad locations 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 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 death or serious personal injury and property damage.
12. 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 10c on the previous page.

### Required Assembly Torques and Helpful Information

<table>
<thead>
<tr>
<th>Nominal Coupling Size inches/DN</th>
<th>Actual Pipe Outside Diameter inches/mm</th>
<th>Required Torques ft-lbs/N•m</th>
<th>Number of Bolts</th>
<th>Number of Washers and Nuts</th>
<th>Nut Size inches/Metric</th>
<th>Socket Size inches/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>62 – 72</td>
<td>62.000 – 72.000</td>
<td>600</td>
<td>8</td>
<td>8</td>
<td>M36</td>
<td>M36</td>
</tr>
<tr>
<td>DN1550 – DN1800</td>
<td>1574.8 – 1828.8</td>
<td>814</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INSTALLATION INSTRUCTIONS – 54-INC/H/IN1350 AND LARGER SIZES

- **Style W77B AGS Flexible Coupling**

**NOTICE**
- The following installation steps feature photos of a 100-inch/ DN2500 Style W77B AGS Flexible Coupling on pipe prepared with AGS Vic-Rings. Note that the same steps apply to installation of 54 – 72-inch/DN1350 – DN1800 sizes of Style W77B AGS Flexible Couplings on AGS direct-grooved pipe.
- Style W77B Couplings for 54 – 88-inch/DN1350 – DN2200 sizes are cast in four segments for ease of handling.
- Style W77B Couplings for 90-inch/DN2250 and larger sizes are cast in six segments for ease of handling.

**FOR STYLE W77B COUPLINGS FOR 54 – 72-INCH/DN1350 – DN1800 SIZES:**
- Style W77B Couplings FOR 54 – 72-inch/DN1350 – DN1800 sizes are designed to be installed on AGS direct-grooved pipe OR on pipe prepared with AGS Vic-Rings. DO NOT attempt to assemble Style W77B Couplings on pipe that is direct-grooved with OGS roll sets.

**FOR STYLE W77B COUPLINGS FOR 78-INCH/DN1950 AND LARGER SIZES:**
- Style W77B Couplings for 78-inch/DN1950 and larger sizes are designed to be installed ONLY on pipe prepared with AGS Vic-Rings.

**WARNING**
- DO NOT attempt to assemble Style W77B 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 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.**

- **FOR 78-INCH/DN1950 AND LARGER SIZES OF STYLE W77B COUPLINGS:** The housings are marked with a number/letter combination on each bolt pad. During installation, the housings’ bolt pads shall be mated so that the same number/letter combination is 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 prevent pinching, rolling, or tearing during installation. Failure to use a compatible lubricant may cause gasket damage, resulting in joint leakage and property damage.

1. PREPARE PIPE: Prepare the pipe by following the appropriate sections on page 1 or 2. Support both pipe lengths securely. Pipe support shall be maintained throughout the entire installation procedure.

2. Apply a thin coat of Victaulic Lubricant or silicone grease to the bolt or stud threads. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt or stud threads.

**STYLE W77B COUPLINGS FOR 54 – 72-INCH/DN1350 – DN1800 SIZES CONTAIN OVAL NECK TRACK BOLTS**

**STYLE W77B COUPLINGS FOR 78-INCH/DN1950 AND LARGER SIZES CONTAIN STUDS**

3. ASSEMBLE SEGMENTS: Assemble segments into two equal halves.

- **FOR 54 – 72-INCH/DN1350 – DN1800 SIZES:** Install a bolt into each hole location at the bolt pads. Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight 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.

- **FOR 78-INCH/DN1950 AND LARGER SIZES:** Insert a stud into each hole location at the bolt pads. Install a flat washer (supplied with the coupling) onto the ends of each stud, and thread a nut finger-tight 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.
4a. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. Refer to Victaulic publication 05.01 for the color code chart, which can be downloaded at victaulic.com.

4b. LUBRICATE GASKET AND HOUSINGS: Apply a thin coat of a compatible lubricant, such as Victaulic Lubricant or silicone grease, to the gasket sealing lips, gasket exterior, and the interior surface of each coupling housing (silicone spray is not a compatible lubricant). Apply extra lubricant to the bolt pad mating areas.

**NOTICE**
- When the gasket is positioned over the pipe end or AGS Vic-Ring, the gasket sealing lips shall maintain full circumferential contact with the pipe.
- The gasket shall fit snug to the pipe end or AGS Vic-Ring. No gaps/sags shall be present between the gasket sealing lips and outside diameter of the pipe end or AGS Vic-Ring.
- A gasket that does not fit snug to the outside diameter of the pipe end or AGS Vic-Ring shall be replaced with a new gasket prior to installation of the coupling housings.

5a. POSITION GASKET: Position the gasket over the pipe end or AGS Vic-Ring. Verify that the gasket does not overhang the pipe end or AGS Vic-Ring.

5b. MOVE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a strapping method similar to the one shown in the above photo, move the lower, fully-tightened segment assembly into position underneath the pipe end or AGS Vic-Ring.

6. JOIN PIPE ENDS OR AGS VIC-RINGS: Align and bring the two pipe ends or AGS Vic-Rings together. Slide the gasket into position and center it between the groove in each pipe end or AGS Vic-Ring. The gasket shall fit snug to the pipe end or AGS Vic-Ring. No gaps/sags shall be present between the gasket sealing lips and outside diameter of the pipe end or AGS Vic-Ring.

**WARNING**
- 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.

**CAUTION**
- Verify that 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. INSTALL UPPER, LOOSENED SEGMENT ASSEMBLY: Using a strapping method similar to the examples shown above, install the upper, loosened segment assembly over the gasket. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring.

8. RAISE THE LOWER SEGMENT ASSEMBLY INTO POSITION: Using a spreader bar or equivalent rigging method to facilitate lifting, raise the lower segment assembly into position. Verify that the housings’ keys completely engage the groove in each pipe end or AGS Vic-Ring. Maintain support of the housings while preparing to install the remaining sets of hardware.

NOTE: As the lower segment assembly is being raised, verify that the gasket is not becoming pinched between the bolt pads. A gasket that is being pinched shall be replaced with a new gasket before proceeding any further with installation.
9. LUBRICATE REMAINING BOLT OR STUD THREADS: Apply a thin coat of Victaulic Lubricant or silicone grease to the remaining bolt or stud threads. **NOTE:** If stainless steel hardware is special ordered, apply an anti-seize compound to the bolt or stud threads.

10a. FOR 54 – 72-INCH/DN1350 – DN1800 SIZES: Install a bolt into each hole location at the two remaining bolt pads. Install a flat washer (supplied with the coupling) onto the end of each bolt, and thread a nut finger-tight onto each bolt. Verify that the oval neck of each bolt seats properly in the bolt hole.

10b. FOR 78-INCH/DN1950 AND LARGER SIZES: Insert a stud into each hole location at the two remaining bolt pads. Install a flat washer (supplied with the coupling) onto the ends of each stud, and thread a nut finger-tight onto the ends of each stud.

11a. START WITH TIGHTENING HARDWARE AT 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.

11b. CONTINUE WITH TIGHTENING HARDWARE AT ALL BOLT PAD LOCATIONS: Continue by tightening the hardware evenly by alternating all bolt pad locations until metal-to-metal bolt pad contact AND the specified torque value are achieved at all bolt pad locations. Refer to the “Required Assembly Torques and Helpful Information” table on the following page.

**NOTE:** It is important to tighten all nuts evenly by alternating bolt pad locations to prevent gasket pinching. 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 THE AGS VIC-RING.**

**WARNING**

- Nuts shall be tightened evenly by alternating all bolt pad locations 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 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 death or serious personal injury and property damage.
12. 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 11b on the previous page.

Required Assembly Torques and Helpful Information

<table>
<thead>
<tr>
<th>Nominal Coupling Size inches/DN</th>
<th>Actual Pipe Outside Diameter inches/mm</th>
<th>Required Torques ft-lbs/Nm</th>
<th>Number of Bolts or Studs</th>
<th>Number of Washers and Nuts</th>
<th>Nut Size inches/Metric</th>
<th>Socket Size inches/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 – 72 DN350 – DN1800</td>
<td>54.000 – 72.000 1371.6 – 1828.8</td>
<td>725 983</td>
<td>8 (Bolts)</td>
<td>8</td>
<td>1 1/2</td>
<td>2 3/8</td>
</tr>
<tr>
<td>78 – 88 DN950 – DN2200</td>
<td>78.000 – 88.000 1981.2 – 2235.2</td>
<td>1200 1627</td>
<td>8 (Studs)</td>
<td>16</td>
<td>1 1/2</td>
<td>2 3/8</td>
</tr>
<tr>
<td>90 and Larger DN2250 and Larger</td>
<td>90.000 and Larger 2286.0 and Larger</td>
<td>1200 1627</td>
<td>12 (Studs)</td>
<td>24</td>
<td>1 3/4</td>
<td>2 1/4</td>
</tr>
</tbody>
</table>
Advanced Groove System \textsuperscript{AGS} Couplings for Direct-Grooved Pipe or \textsuperscript{AGS} Vic-Ring Applications

STYLE W07 RIGID AND STYLES W77/W77B/W77N FLEXIBLE