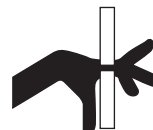
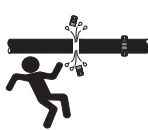


Victaulic® Styles 234/234S Restrained, Flexible Single-Gasket Couplings

⚠ WARNING



- Read and understand all instructions before attempting to install any Victaulic piping products.
 - Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
 - Wear safety glasses, hardhat, and foot protection when working with Victaulic piping products.
 - Keep hands away from pinch points at all times.
- Failure to follow these instructions could result in serious personal injury, property damage, and/or product damage.

IMPORTANT INFORMATION

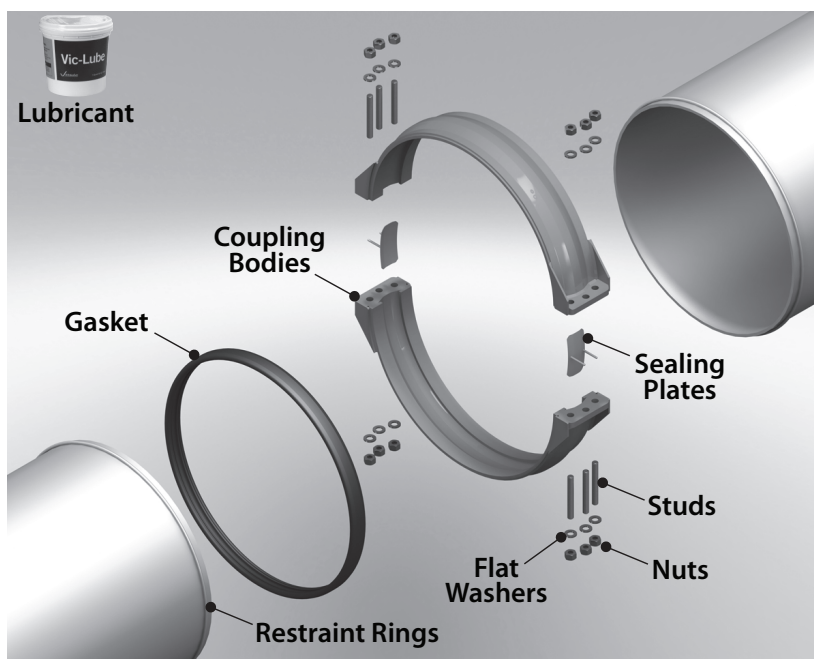
- **THESE INSTRUCTIONS MUST BE PROVIDED TO THE INSTALLER.** For the installation to be completed properly, **ALL** information contained in these instructions and the "Restraint Ring Placement and Welding Data" sheet **MUST** be considered before installation occurs. The "Restraint Ring Placement and Welding Data" sheet, supplied with every restraint ring shipment, contains important information regarding restraint ring placement.
- Check the packing list to make sure all materials are available for installation. Contact your Victaulic sales representative immediately if parts are not available at the jobsite.
- Keep all products stored in their protective wrappings until they are ready for installation. Gaskets should not be stored in direct sunlight or sub-freezing temperatures. **DO NOT** store anything on top of gaskets and sealing plates. Handle couplings with care to prevent damage to the sealing surfaces.
- The installer must have appropriate wrenches and socket devices to tighten the hardware that is supplied with the product. Wrenches and socket devices are not supplied with the product.
- **Couplings that contain stainless steel hardware may be shipped with two sets of studs. The carbon steel hardware is used for installation purposes only, since stainless steel hardware is sensitive to seizing. Refer to the "Replacing Carbon Steel Installation Hardware" section for complete instructions.**

ITEMS PROVIDED WITH SHIPMENT:

- Coupling
- Sealing Plates
- Rubber Gasket
- Pipe Joint Lubricant
- Studs with Flat Washers and Nuts

TOOLS REQUIRED FOR INSTALLATION:

- Long-Handled Ratchet Wrench
- Box Wrench



STYLE 234 COUPLING SHOWN

Victaulic® Styles 234/234S Restrained, Flexible Single-Gasket Couplings

PIPE END PREPARATION

The “pipe end” is considered a distance equal to or greater than the total width of the coupling body. The exterior surface of the pipe **MUST** be smooth and free from weld reinforcement, weld bead, seams, scars, indentations, roll marks, and flat spots. Before installation, the pipe ends must be clean and free from oil, dirt, debris, sharp edges, and any foreign material that may interfere with joint sealing. Painted pipe ends must be free from knits and surface defects.

PIPE ROUNDNESS

Nominal Pipe Size	Tolerance on Roundness
Up to 14 inches Up to DN 350	Within $\frac{1}{8}$ inch Within 3.2 mm
16 – 20 inches DN 400 – DN 500	Within 1 Percent
24 – 36 inches DN 600 – DN 900	Within $\frac{3}{4}$ Percent
42 – 108 inches DN 1050 – DN 2700	Within $\frac{1}{2}$ Percent
Greater than 108 inches Greater than DN 2700	Within $\frac{3}{8}$ Percent

PIPE DIAMETER TOLERANCE IF BOTH PIPES ARE THE SAME OD (PLUS/MINUS TOLERANCE STILL APPLIES)

Nominal Pipe Size	Tolerance on Actual OD (OD Based on Actual Pipe Circumference)
Up to 14 inches Up to DN 350	-0.06/+0.12 inch -1.5/+3.0 mm
16 – 36 inches DN 400 – DN 900	-0.08/+0.18 inch -2.0/+4.6 mm
42 – 54 inches DN 1050 – DN 1350	-0.12/+0.25 inch -3.0/+6.4 mm
60 – 144 inches DN 1500 – DN 3600	-0.25/+0.31 inch -6.4/+7.9 mm

ALLOWABLE PIPE MISALIGNMENT

Nominal Pipe Size	Allowable Misalignment
Up to 20 inches Up to DN 500	$\frac{3}{32}$ inch 2.4 mm
24 – 54 inches DN 600 – DN 1350	$\frac{1}{8}$ inch 3.2 mm
Greater than 60 inches Greater than DN 1500	$\frac{3}{16}$ inch 4.8 mm

PLUS/MINUS TOLERANCE

ALLOWABLE DIFFERENCE BETWEEN PIPE DIAMETERS AT JOINT

Nominal Pipe Size	Allowable Pipe OD Difference (OD Based on Actual Pipe Circumference)
Up to 16 inches Up to DN 400	0.09 inch 2.3 mm
18 – 24 inches DN 450 – DN 600	0.12 inch 3.0 mm
30-inch and Larger DN 760 and Larger	0.15 inch 3.8 mm

Victaulic® Styles 234/234S Restrained, Flexible Single-Gasket Couplings

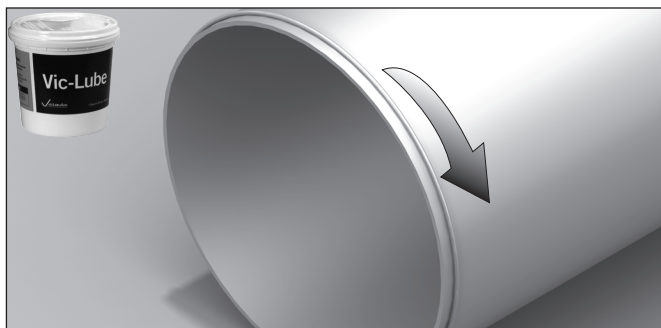
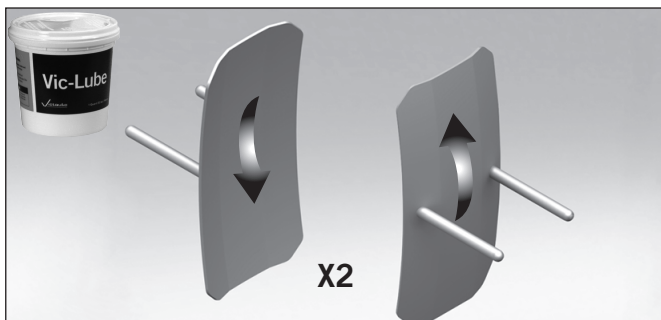
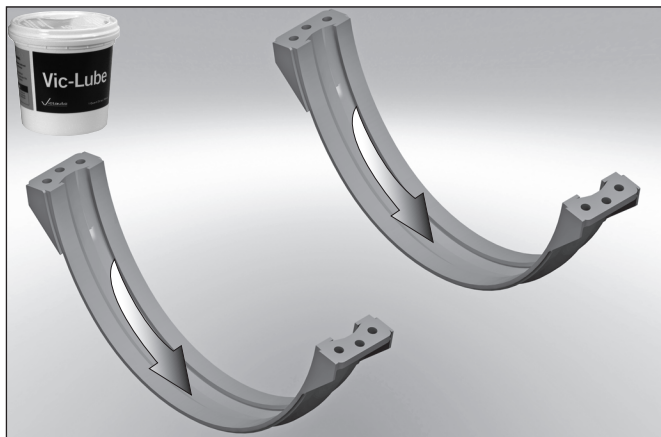
INSTALLATION

⚠ CAUTION

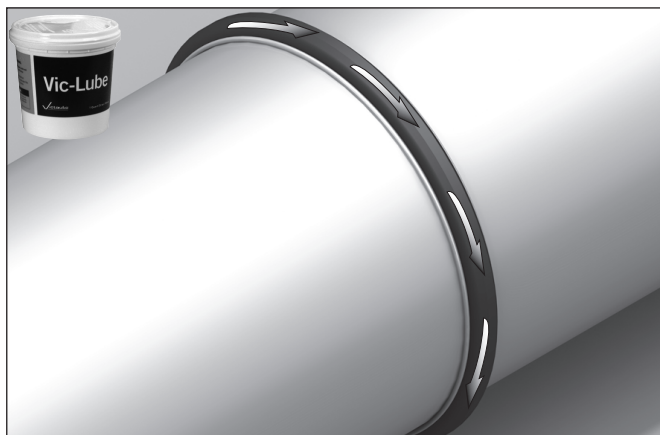
- The gasket, pipe ends, both sides of the sealing plates, and interior coupling body surfaces **MUST** be lubricated for proper product installation.
- Protect lubricated surfaces from dirt and debris.

Failure to properly lubricate the product could cause rolling or pinching of the gasket, resulting in joint leakage and property damage.

1. Refer to the “Restraint Ring Placement and Welding Data” sheet to inspect restraint ring placement. Make sure the restraint rings are located on the pipe end per the specification and that the attachment welds comply with weld requirements.



2. Make sure the interior surfaces of the coupling bodies are clean. Apply an even coat of lubricant (provided with the product) to the interior surfaces of each coupling body, both sides of the sealing plates, and both pipe ends (total width of a coupling body back from the pipe ends), as shown.

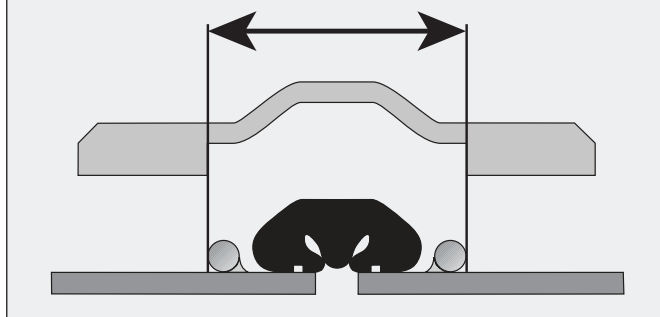


3. Slide the gasket over one of the lubricated pipe ends past the restraint rings. The gasket is designed to fit tight and will require stretching to fit around the pipe diameter. Apply lubricant to the gasket after it is placed on the pipe end by lifting the gasket and applying lubricant around the diameter. Place the bonded area of the gasket away from the openings of the coupling bodies that are intended for the sealing plate locations. Make sure all twists are removed from the gasket.

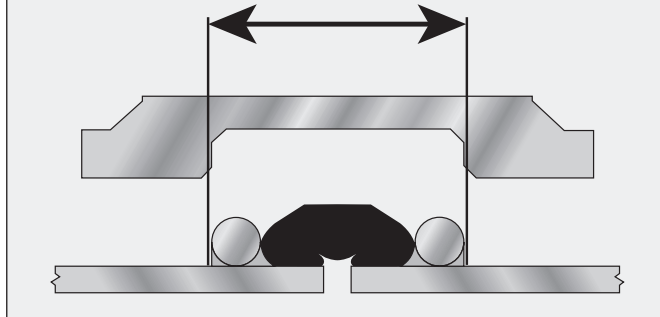
3a. Align and bring the pipe ends into position within the gap range specified on the submittal sheet for the coupling (refer to the applicable Section 60 submittal document).

3b. Position the gasket between the restraint rings over the pipe gap.

Style 234/234S

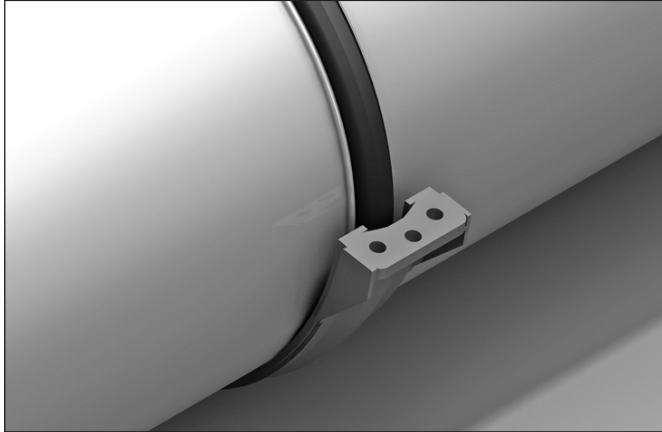


Style 235

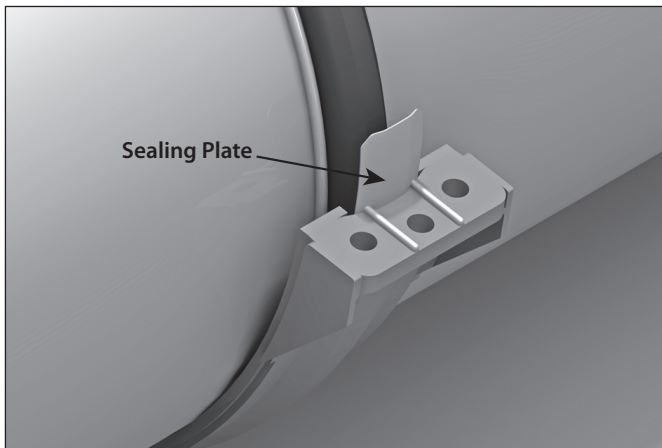


4. Measure the outside-to-outside distance of the restraint rings to verify that it is equal to or slightly less than the distance from shoulder-to-shoulder on the coupling body interior.

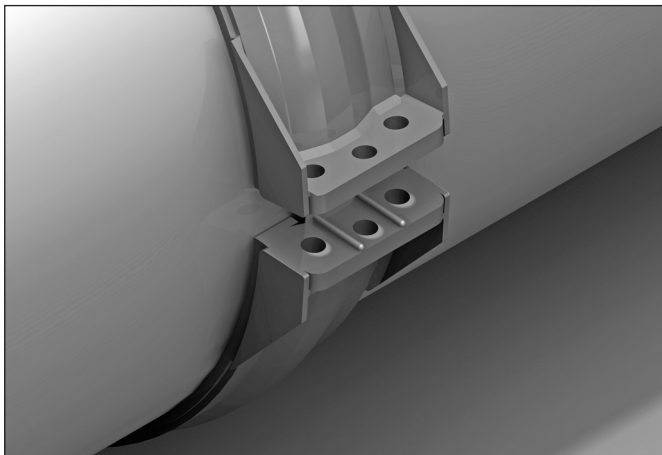
Victaulic® Styles 234/234S Restrained, Flexible Single-Gasket Couplings



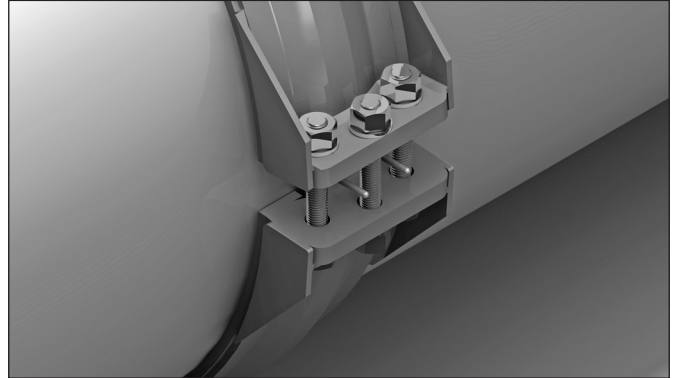
5. When possible, center one coupling body below the pipe joint. Raise the bottom coupling body until it contacts the installed gasket. Make sure the gasket is seated in the arch or gasket pocket and that it does not shift out of position. When the bottom coupling body is positioned properly, use cribbing to stabilize and maintain this position. **NOTE:** Depending on field conditions, the upper coupling body can be installed first.



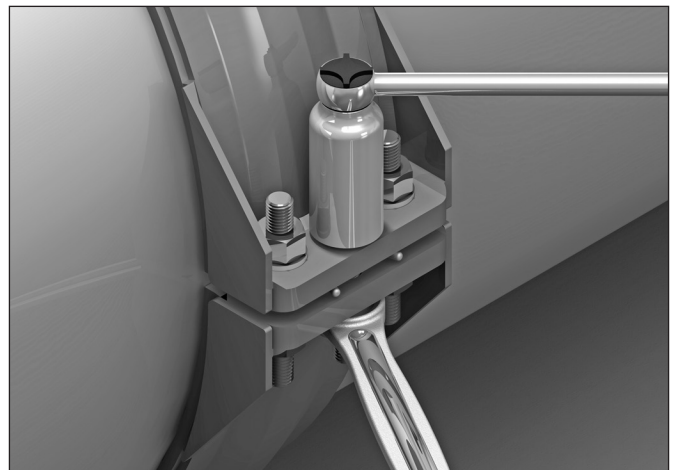
6. Insert a sealing plate, **with the pins facing out**, between the coupling body and gasket on each side of the coupling body, as shown above.



7. Position the other coupling body over the pipe joint with the gasket seated in the arch or gasket pocket. Make sure the gasket does not shift out of position.



8. Apply lubricant (provided with the product) to the threads of all carbon steel studs. **NOTE:** Anti-seize lubricant is required for stainless steel fasteners. Insert studs with flat washers into the holes of both closure plates on each side of the coupling bodies, as shown above. Apply nuts and tighten until threads protrude. **Carbon steel installation hardware must be used, when provided with the product.** Make sure the gasket is seated in the arch or gasket pocket before proceeding to the next step.



9. Finish closing the coupling bodies by tightening each set of hardware gradually, alternating between the two closure plate locations, until the coupling bodies contact the pipe surface around its circumference and the inside surface of the shoulders contacts the outside surface of the restraint rings. The closure plates should not contact each other.

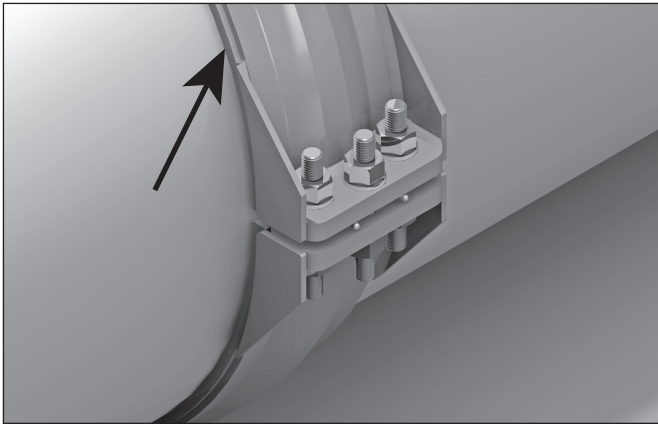
9a. Refer to the table below for the maximum assembly torques that can be applied to various stud sizes. **DO NOT EXCEED THE TORQUE VALUES SPECIFIED IN THIS TABLE.**

Maximum Assembly Torque Values

Stud Size inches	Maximum Assembly Torque Value ft-lbs/N•m*	
	Carbon Steel Hardware	Stainless Steel Hardware
½	240	220
	325	298
⅝	300	275
	407	373
¾	360	330
	488	447
7/8	425	320
	576	434
1	485	370
	658	502
1 ⅛	550	330
	746	447
1 ¼	600	375
	814	509

* Applies to all coupling types

Victaulic® Styles 234/234S Restrained, Flexible Single-Gasket Couplings



10. Proper assembly is achieved when the coupling bodies are in full contact with the pipe surface and restraint rings with equal spacing between the closure plate locations. However, a gap between the shoulders and the pipe is acceptable if it does not exceed the following specifications.

FOR STYLE 234: $\frac{3}{32}$ inch/2.4 mm and totals no more than 10% of the pipe circumference

FOR STYLE 235: $\frac{1}{8}$ inch/3.2 mm and totals no more than 10% of the pipe circumference

10a. If stainless steel hardware is required, follow the “Replacing Carbon Steel Installation Hardware” section on this page for replacement steps.



WARNING

- Restraint rings should engage with the coupling bodies before attempting to pressurize the system.

Failure to follow this instruction could result in serious personal injury and/or property damage due to system movement.

NOTICE

- A gap will be present between the closure plates.

REPLACING CARBON STEEL INSTALLATION HARDWARE (WHEN SUPPLIED) WITH STAINLESS STEEL HARDWARE

If stainless steel hardware is required, it must be installed after proper assembly is achieved with the carbon steel installation hardware.

- 1.** Apply a high-quality, anti-seize compound (supplied by others) to the stainless steel studs to prevent seizing.
- 2.** Remove the carbon steel hardware one at a time, and replace it with the stainless steel hardware. After all carbon steel hardware is replaced with stainless steel hardware, re-inspect the joint to ensure proper assembly, as described in step 10 of the “Installation” section.

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For complete contact information, visit www.victaulic.com

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