

Style 644 Installation-Ready™ Transition Coupling for Potable Water



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, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.
- The Style 644 Installation-Ready™ Transition Coupling shall be used to join only copper tubing and stainless steel pipe, as specified in Victaulic publication 22.44.

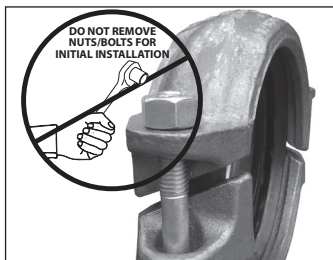
Failure to follow these instructions could result in death or serious personal injury and property damage.

IMPORTANT INFORMATION



The opening of the coupling that is marked "OGS STAINLESS STEEL" shall be used **ONLY** with Victaulic Original Groove System (OGS) stainless steel mating components prepared in accordance with Victaulic publications 17.01 and 25.01. The opening of the Style 644 Installation-Ready™ Transition Coupling that is marked "CTS COPPER" shall be used **ONLY** with Victaulic Copper Connection Products and copper tubing prepared in accordance with Victaulic publication 25.06. These publications can be downloaded at victaulic.com.

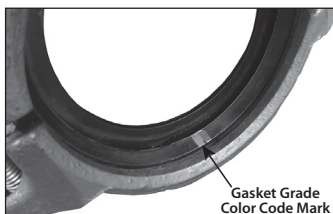
INSTRUCTIONS FOR THE INITIAL INSTALLATION OF STYLE 644 COUPLINGS



1. DO NOT DISASSEMBLE THE COUPLING: Style 644 Installation-Ready™ Transition Couplings are designed so that the installer does not need to remove the bolts and nuts for installation. This design facilitates assembly by allowing the installer to directly insert the grooved end of mating components into the coupling.

2. CHECK MATING COMPONENT ENDS: The outside surface of the mating components, between the groove and the mating component end, shall be smooth and free from indentations, projections, weld seams, and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, dirt, and cutting particles shall be removed.

The mating components' outside diameter ("OD") and groove dimensions shall be within the tolerances published in current Victaulic publications 17.01, 25.01, and 25.06, which can be downloaded at victaulic.com.



3. 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.

CAUTION

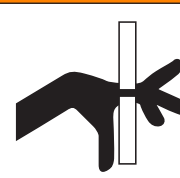
- A thin coat of Victaulic Lubricant or silicone lubricant shall be used on the sealing lips to prevent the gasket from pinching/tearing during installation.

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



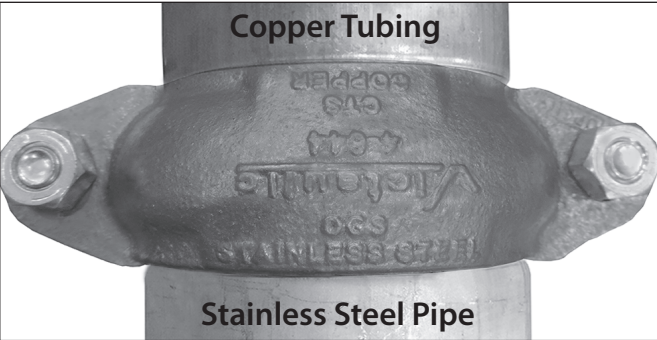
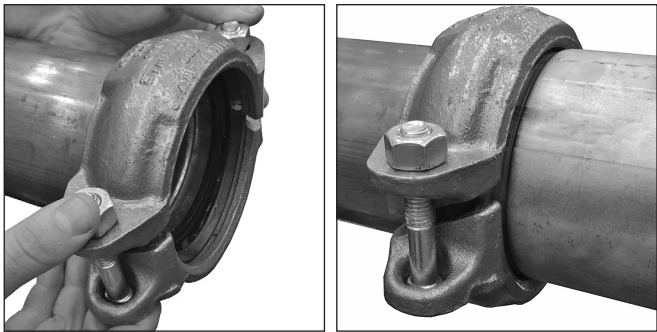
4. LUBRICATE GASKET: Apply a thin coat of Victaulic Lubricant or silicone lubricant only to the sealing lips of the gasket. **NOTE:** The gasket exterior is supplied with a factory-applied lubricant, so it is not necessary to remove the gasket from the housings to apply additional lubricant to the exterior surface.

WARNING



- During vertical installation, support the upper pipe to prevent the copper tubing from sliding into the stainless steel pipe.
- Never leave a Style 644 Coupling partially assembled. **ALWAYS TIGHTEN THE HARDWARE IMMEDIATELY.** A partially-assembled coupling poses a drop or fall hazard during installation and a burst hazard during testing.
- Keep hands away from the mating component ends and the openings of the coupling when attempting to insert grooved mating component ends into the coupling.
- Keep hands away from coupling openings during tightening.

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

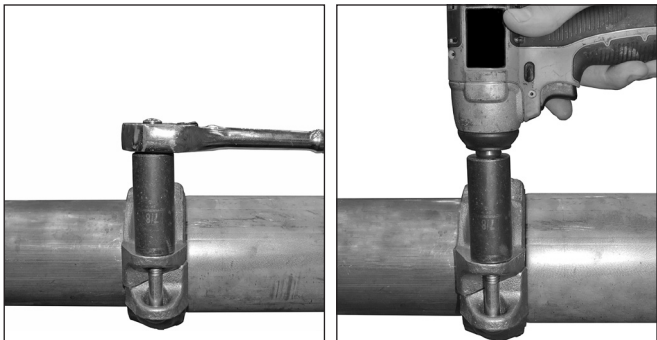


5. ASSEMBLE JOINT: Assemble the joint by inserting the grooved end of a copper mating component into the coupling opening marked “CTS COPPER” and a stainless steel mating component into the coupling opening marked “OGS STAINLESS STEEL”. The ends of the grooved mating components shall be inserted into the coupling until contact with the center leg of the gasket occurs. A visual check is required to verify that the coupling keys align with the grooves in the mating components. The coupling may be rotated to verify that the gasket is seated properly.

NOTE: Victaulic recommends the use of Victaulic fittings and valves with the Style 644 Installation-Ready™ Transition Coupling.

⚠ WARNING

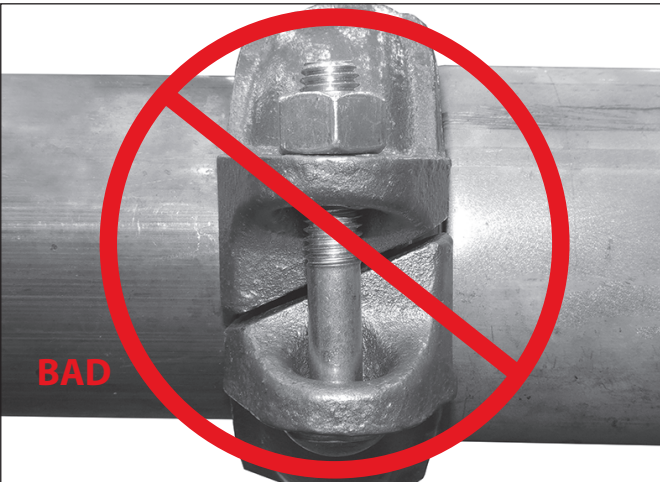
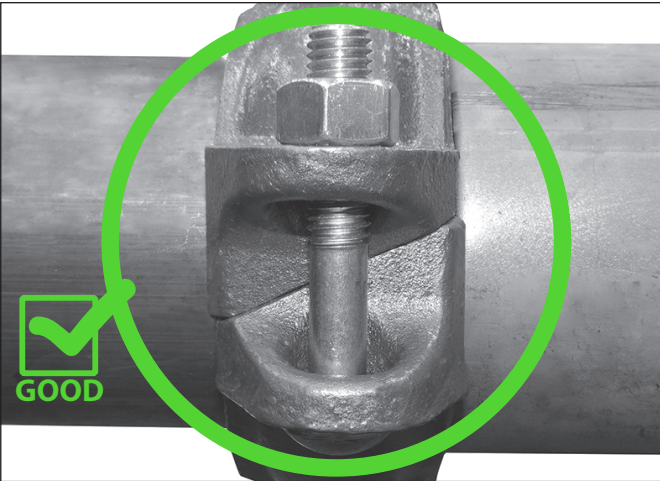
- Nuts shall be tightened evenly by alternating sides until metal-to-metal contact occurs at the angled bolt pads.
 - Equal and positive or neutral offsets shall be present at the angled bolt pads.
 - DO NOT continue to tighten the nuts after the visual installation guidelines for the coupling are achieved.
- Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.



6. TIGHTEN NUTS: Using an impact wrench or standard socket wrench with a deep-well socket, tighten nuts evenly by alternating sides until metal-to-metal contact occurs at the angled bolt pads. Verify that the oval neck of each bolt seats properly in the bolt hole. Equal and positive or neutral offsets shall be present at the bolt pads. DO NOT continue to tighten the nuts after metal-to-metal bolt pad contact is achieved. Refer to the “Style 644 Helpful Information” and “Impact Wrench Usage Guidelines” sections.

STYLE 644 HELPFUL INFORMATION

Nominal Size inches/DN	Actual Outside Diameter inches/mm		Nut Size inches/ Metric	Deep-Well Socket Size inches/ mm
	Stainless Steel Pipe	Copper Tubing		
2 DN50	2.375 60.3	2.125 54.0	3/8 M10	1 1/16 17
2 1/2	2.875 73.0	2.625 66.7	3/8 M10	1 1/16 17
3 DN80	3.500 88.9	3.125 79.4	1/2 M12	7/8 18
4 DN100	4.500 114.3	4.125 104.8	1/2 M12	7/8 18
6 DN150	6.625 168.3	6.125 155.6	3/4 M16	1 1/16 24

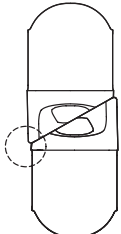


7. Visually inspect the bolt pads at each joint to verify that metal-to-metal contact is achieved across the entire bolt pad section. Equal and positive or neutral offsets shall be present at each bolt pad, in accordance with step 6.

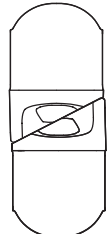
⚠ WARNING

- Visual inspection of each joint is required.
- Improperly assembled joints shall be corrected before the system is placed in service.

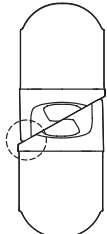
Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.

✓ GOOD

PROPERLY ASSEMBLED JOINT
POSITIVE OFFSET WITH BOLT PAD CONTACT



PROPERLY ASSEMBLED JOINT
NEUTRAL OFFSET WITH BOLT PAD CONTACT

⊗ BAD

IMPROPERLY ASSEMBLED JOINT
NEGATIVE OFFSET



IMPROPERLY ASSEMBLED JOINT
BOLT PAD GAP

- “Negative” bolt pad offsets can occur when the nuts are not tightened evenly, which produces over-tightening of one side and under-tightening of the other side. In addition, “negative” offsets can occur if both nuts are under-tightened.

IMPACT WRENCH USAGE GUIDELINES**⚠ WARNING**

- Nuts shall be tightened evenly by alternating sides until metal-to-metal contact occurs at the bolt pads.
- **DO NOT** continue to tighten the nuts after the visual installation guidelines for the coupling, described in steps 6 – 7 on page 2, are achieved.

Failure to follow these instructions could cause gasket pinching and coupling damage, resulting in death or serious personal injury and property damage.

Impact wrenches do not provide the installer with direct “wrench feel” or torque to judge nut tightness. Since some impact wrenches are capable of high output, it is important to develop a familiarity with the impact wrench to avoid damaging or fracturing the bolts or the coupling’s bolt pads during installation. **DO NOT** continue to tighten the nuts after the visual installation guidelines for the coupling, described in steps 6 – 7 on page 2, are achieved.

If the battery is drained or if the impact wrench is under-powered, a new impact wrench or a new battery pack shall be used to ensure that the visual installation guidelines for the coupling, described in steps 6 – 7 on page 2, are achieved.

Perform trial assemblies with the impact wrench and check the assemblies with socket or torque wrenches to help determine the capability of the impact wrench. Using the same method, periodically check additional nuts throughout the system installation.

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 coupling hardware could result in:

- Personal injury or death
- Bolt fractures
- Damaged or broken bolt pads or fractures to Style 644 housings
- Joint leakage

INSTRUCTIONS FOR REASSEMBLY OF STYLE 644 COUPLINGS**⚠ WARNING**

- Verify that the system is depressurized and drained completely before attempting to disassemble any couplings.

Failure to follow this instruction could result in death or serious personal injury and property damage.

1. Verify that the system is depressurized and drained completely before attempting to disassemble any couplings.

2. Follow steps 2 – 3 on page 1. Inspect the gasket for any damage or wear. If any damage or wear is present, replace the gasket with a new Victaulic-supplied gasket of the same material grade.

⚠ CAUTION

- A thin coat of Victaulic Lubricant or silicone lubricant shall be used to prevent the gasket from pinching/tearing during reassembly.

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



3. **FOR REASSEMBLY OF STYLE 644 COUPLINGS, LUBRICATE GASKET:** Apply a thin coat of Victaulic Lubricant or silicone lubricant to the gasket sealing lips and exterior. It is normal for the gasket surface to have a hazy white appearance after it has been in service.

NOTICE

Two methods can be followed for reassembly of Style 644 Couplings.



- **METHOD 1 FOR REASSEMBLY:** The coupling can be reassembled into its “installation-ready” condition by installing the gasket into the housings, then inserting the bolts and threading a nut onto each bolt until 2 – 3 threads are exposed. The gasket is marked “STAINLESS STEEL” on one side and “COPPER” on the other side. Verify that the side of the gasket marked “COPPER” is facing the sides of the two housings marked “CTS COPPER.” If this method is chosen, steps 1 – 3 above, along with all steps on page 2, shall be followed.

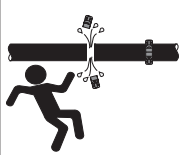
OR

- **METHOD 2 FOR REASSEMBLY:** The gasket and housings can be assembled onto the mating component ends by following steps 1 – 3 above, along with all steps in the “Method 2 for Reassembly” section on the following page.

Style 644 Installation-Ready™ Transition Coupling for Potable Water

Method 2 for Reassembly

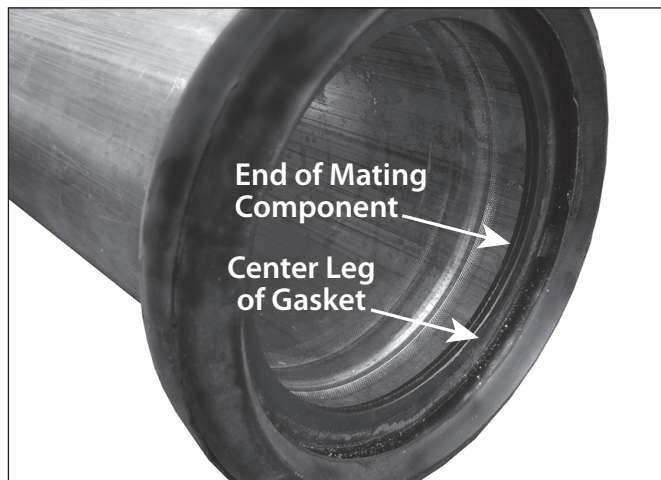
WARNING



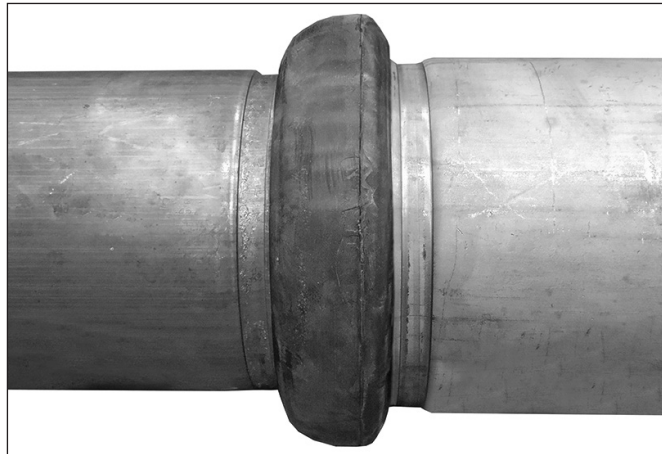
- Verify that the system is depressurized and drained completely before attempting to disassemble any couplings.

Failure to follow this instruction could result in death or serious personal injury and property damage.

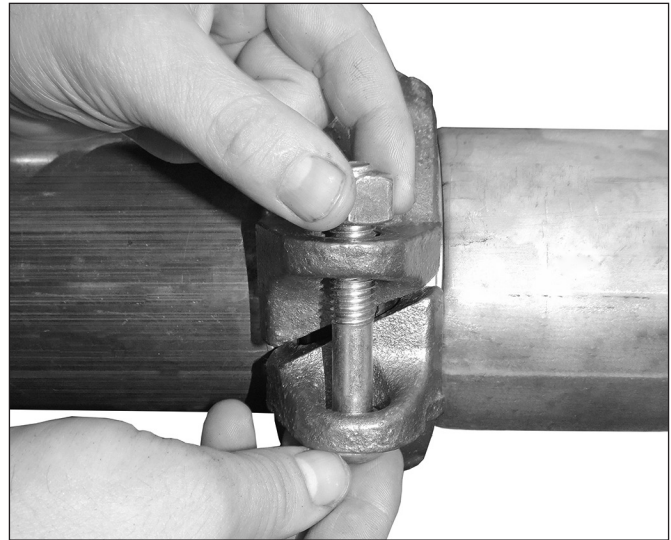
Verify that steps 1 – 3 in the “Instructions for Reassembly of Style 644 Couplings” section have been followed.



4. INSTALL GASKET: Insert the grooved end of a copper mating component into the side of the gasket marked “COPPER” until it contacts the center leg of the gasket.



5. JOIN MATING COMPONENTS: Align the two grooved mating component ends. Insert the stainless steel mating component end into the side of the gasket marked “STAINLESS STEEL” until it contacts the center leg of the gasket. **NOTE:** Verify that no portion of the gasket extends into the groove of either mating component.



6. INSTALL HOUSINGS: Install the housings over the gasket. Verify that the sides of the two housings marked “CTS COPPER” are facing the copper mating component and that the housings’ keys engage the grooves completely on both mating components.

6a. 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.

6b. TIGHTEN NUTS: Follow steps 6 – 7 on page 2 to complete the assembly.