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.

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.

- 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.

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.

CAUTION
- 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.

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.

PROPERLY ASSEMBLED JOINT

POSITIVE OFFSET WITH BOLT PAD CONTACT

GOOD

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.

GOOD

BAD

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.

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.

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.

INSTRUCTIONS FOR REASSEMBLY OF STYLE 644 COUPLINGS

GOOD

BAD

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**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.