

Style 07-TCS Rigid Coupling for Technology Cooling Systems

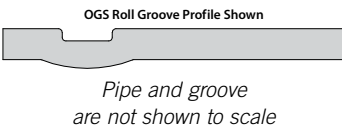


WARNING



- 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.
- This product shall be installed **ONLY** with mating components that are prepared to Victaulic Original Groove System (OGS) specifications.
- **DO NOT** attempt to install this product on mating components that are prepared to any other groove specification.

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



1. CHECK MATING COMPONENT ENDS: The outside surface of the mating components, between the groove and the mating component ends, shall be generally free from indentations, projections, weld seam anomalies, and roll marks to ensure a leak-tight seal. All oil, grease, loose paint, dirt, and cutting particles shall be removed. Always verify that the correct grooving roll sets and groove profile are being used. **Reference Victaulic publication 17.01 for stainless steel pipe end preparation requirements, which can be downloaded at victaulic.com.**

The mating components' outside diameter ("OD"), groove dimensions, and maximum allowable flare diameter shall be within the tolerances listed in publication 25.01 for Victaulic OGS groove specifications.

2. CHECK GASKET: Check the gasket to verify that it is suitable for the intended service. The color code identifies the material grade. **For complete compatibility information, reference Victaulic publications 05.01 and GSG-100, which can be downloaded at victaulic.com.**

CAUTION

- A thin coat of a recommended lubricant, listed below, shall be applied to the gasket sealing lips and exterior to help prevent the gasket from pinching, rolling, or tearing during installation.
- **DO NOT** use excessive lubricant on the gasket sealing lips and exterior.

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

RECOMMENDED LUBRICANTS (applied with a brush or by hand – DO NOT dilute with water):

Palmolive* Pure + Clear
Palmolive* Ultra Strength
Ajax* Ultra Triple Action

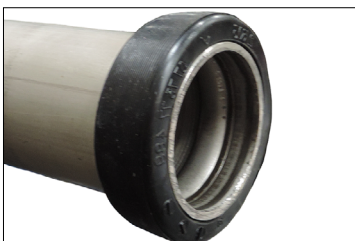
Dawn† Free & Clear
Dawn† Ultra
Dawn† Platinum

Oxydol†† Ultra
Fairy† Original
Undiluted Propylene Glycol

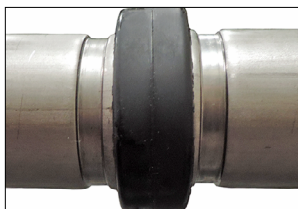
* Palmolive and Ajax are registered trademarks of Colgate-Palmolive Peet-Company
† Dawn and Fairy are registered trademarks of Procter & Gamble Company
†† Oxydol is a registered trademark of Redox Brands, Inc.



3. LUBRICATE GASKET: Apply a thin coat of a recommended lubricant, listed above, to the gasket sealing lips and exterior. **DO NOT** dilute – apply with a brush or by hand directly to the gasket sealing lips and exterior.



4. INSTALL LUBRICATED GASKET: Install the lubricated gasket over the mating component end.

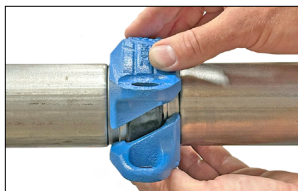


5. JOIN MATING COMPONENTS: Align the centerlines of the two grooved mating component ends and bring them to within the appropriate pipe-end separation dimension. Slide the gasket into position and center it between the groove of each mating component. **NOTE:** Verify that no portion of the gasket extends into the groove of either mating component.

⚠ CAUTION

- Verify that the gasket does not become rolled or pinched while installing the housings.

Failure to follow this instruction may cause gasket damage, resulting in joint leakage and property damage.



6. INSTALL HOUSINGS: Install the housings over the gasket. Verify that the housings' keys engage the grooves completely on both mating components.



7. INSTALL STAINLESS STEEL BOLTS/WASHERS/NUTS: Install the bolts through the bolt pads of the housings. Apply one washer onto the end of each bolt and then thread a nut finger-tight onto each bolt. **NOTE:** Verify that the oval neck of each bolt seats properly in the bolt hole.

⚠ WARNING

- Nuts shall be tightened evenly by alternating sides, maintaining nearly uniform bolt pad gaps, until metal-to-metal contact occurs at the angled bolt pads, as indicated in steps 8 and 9.
- Equal and positive or neutral offsets shall be present at the angled bolt pads, as indicated in steps 8 and 9.
- Keep hands away from coupling openings during tightening.

Failure to tighten nuts as instructed will cause increased loading of the hardware, resulting in the following conditions:

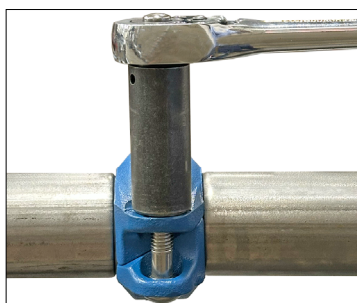
- Excessive bolt torque required to assemble the joint (incomplete assembly)
- Damage to the assembled joint (damaged or broken bolt pads or fractures to housings)
- Bolt damage or fracture
- Joint leakage and property damage
- A negative impact on system integrity
- Personal injury or death

DO NOT continue to tighten the nuts after the visual, metal-to-metal bolt pad inspection requirement is achieved.

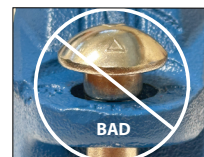
- Failure to follow this instruction could result in the conditions listed above.

NOTICE

- It is important to tighten the nuts evenly by alternating sides to prevent gasket pinching.
- An impact tool or standard socket wrench with a deep-well socket can be used to bring the bolt pads into metal-to-metal contact.
- Refer to the "Impact Tool Usage Guidelines" and "Impact Tool Selection" sections of the I-IMPACT, which can be downloaded at victaulic.com, along with the "Helpful Information" table on page 4 of these instructions.



OVAL NECK OF BOLT SEATED PROPERLY



OVAL NECK OF BOLT NOT SEATED PROPERLY

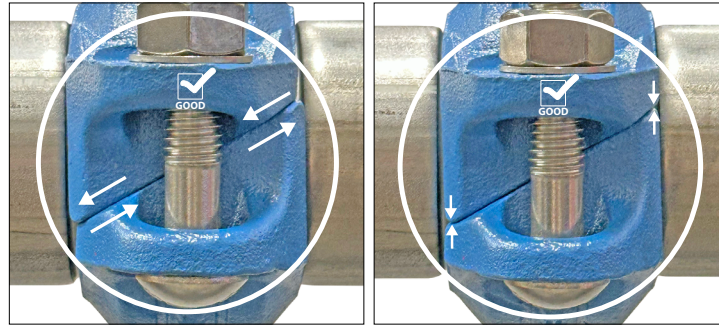
8. TIGHTEN NUTS: Using an impact tool or a standard socket wrench with a deep-well socket, tighten the nuts evenly by alternating sides, maintaining nearly uniform bolt pad gaps, until metal-to-metal contact occurs at the angled bolt pads. Equal and positive or neutral offsets shall be present at the bolt pads. Verify that the oval neck of each bolt seats properly in the bolt holes. DO NOT continue to tighten the nuts after the visual, metal-to-metal bolt pad inspection requirement is achieved. **If you suspect that any hardware has been over-tightened (as indicated by a bend in the bolt, bulging of the nut at the bolt pad interface, or damage to the bolt pad, etc.), the entire coupling assembly shall be replaced immediately.**

⚠ WARNING

- Visual inspection of each joint is required.
- Improperly assembled joints shall be corrected before the system is filled, tested, or placed into service.
- Any components that exhibit physical damage due to improper assembly shall be replaced before the system is filled, tested, or placed into service.

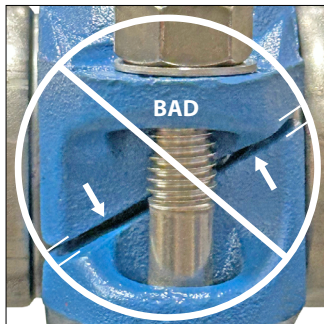
Failure to follow these instructions could cause joint failure, resulting in death or serious personal injury and property damage.

9. Visually inspect each bolt pad location at every 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 location.



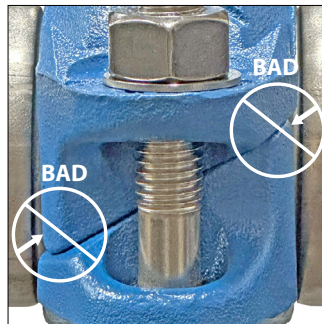
**PROPERLY ASSEMBLED JOINT
METAL-TO-METAL CONTACT AT ANGLED
BOLT PADS WITH EQUAL, POSITIVE
OFFSETS AT THE BOLT PADS**

**PROPERLY ASSEMBLED JOINT
METAL-TO-METAL CONTACT AT ANGLED
BOLT PADS WITH EQUAL, NEUTRAL
OFFSETS AT THE BOLT PADS**



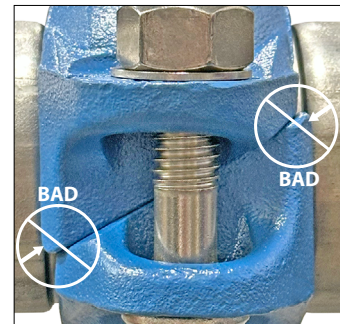
**IMPROPERLY ASSEMBLED JOINT
BOLT PAD GAP**

Bolt pad gaps occur when the nuts are not tightened sufficiently or if the hardware is not tightened evenly by alternating sides. Refer to the "Improperly Assembled Joint – Over-Shifted" section below. In addition, refer to the "Impact Tool Usage Guidelines" and "Impact Tool Selection" sections in this handbook. This represents an improper assembly, which could result in joint failure, property damage, serious personal injury, or death.



**IMPROPERLY ASSEMBLED JOINT
NEGATIVE OFFSET**

Negative bolt pad offsets 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 occur if both nuts are under-tightened. Refer to the "Impact Tool Usage Guidelines" and "Impact Tool Selection" sections in this handbook. This represents an improper assembly, which could result in joint failure, property damage, serious personal injury, or death.



**IMPROPERLY ASSEMBLED JOINT
OVER-SHIFTED**

Over-shifting of an angled bolt pad results in an offset that prevents metal-to-metal contact and equal and positive or neutral offset at the opposite angled bolt pad. This occurs when the hardware is not tightened evenly by alternating sides. Attempting to tighten the hardware on one side while the other side is over-shifted will result in bolt torque that exceeds the "Maximum Allowable Bolt Torque" values specified in the "Helpful Information" table in this section. Refer to the "Impact Tool Usage Guidelines" and "Impact Tool Selection" sections in this handbook. This represents an improper assembly, which could result in joint failure, property damage, serious personal injury, or death.

Continued on the following page

Style 07-TCS Rigid Coupling for Technology Cooling Systems

Style 07-TCS Helpful Information

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Style 07-TCS		
		Nut Size inches/ Metric	Deep-Well Socket Size inches/ mm	Max. Allow. Bolt Torque*
1 DN25	1.315 33.7	3/8 M10	1 1/16 17	20 ft-lbs 27 N•m
1 1/4 DN32	1.660 42.4	3/8 M10	1 1/16 17	20 ft-lbs 27 N•m
1 1/2 DN40	1.900 48.3	3/8 M10	1 1/16 17	20 ft-lbs 27 N•m
2 DN50	2.375 60.3	1/2 M12	7/8 22	45 ft-lbs 61 N•m
2 1/2 DN65	2.875 73.0	1/2 M12	7/8 22	45 ft-lbs 61 N•m
3 DN80	3.500 88.9	1/2 M12	7/8 22	45 ft-lbs 61 N•m

* Maximum allowable bolt torque values have been derived from actual test data.

Nominal Pipe Size inches/DN	Actual Pipe Outside Diameter inches/mm	Style 07-TCS		
		Nut Size inches/ Metric	Deep-Well Socket Size inches/ mm	Max. Allow. Bolt Torque*
4 DN100	4.500 114.3	1/2 M12	7/8 22	45 ft-lbs 61 N•m
5 DN125	5.500 139.7	5/8 M16	1 1/16 27	105 ft-lbs 142 N•m
6 DN150	5.563 141.3	5/8 M16	1 1/16 27	105 ft-lbs 142 N•m
8 DN200	6.625 168.3	5/8 M16	1 1/16 27	105 ft-lbs 142 N•m
10 DN250	8.625 219.1	3/4 M20	1 1/4 32	130 ft-lbs 176 N•m
12 DN300	10.750 273.0	7/8 M22	1 7/16 36	215 ft-lbs 292 N•m
12 DN300	12.750 323.9	7/8 M22	1 7/16 36	215 ft-lbs 292 N•m

LINKS TO REFERENCE MATERIALS LISTED THROUGHOUT THIS DOCUMENT

OGS Groove Specifications

For the most up-to-date information regarding OGS roll groove specifications, reference the current revision of Victaulic publication 25.01, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/25.01.pdf>



Stainless Steel Pipe End Preparation

For the most up-to-date information regarding stainless steel pipe end preparation, reference the current revision of Victaulic publication 17.01, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/17.01.pdf>



Seal Selection Guide – Elastomeric Seal Construction

For the most up-to-date information regarding gasket suitability, reference the current revision of Victaulic publication 05.01, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/05.01.pdf>



Gasket Chemical Service Guide

For the most up-to-date chemical gasket services guide, reference the current revision of Victaulic publication GSG-100, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/GSG-100.pdf>



I-IMPACT

For the most up-to-date information on “Impact Tool Usage Guidelines” and “Impact Tool Selection”, reference the current revision of Victaulic publication I-IMPACT, which can be viewed/downloaded by scanning the mobile QR code link to the right, or by clicking on this desktop link:

<https://www.victaulic.com/assets/uploads/literature/I-IMPACT.pdf>

