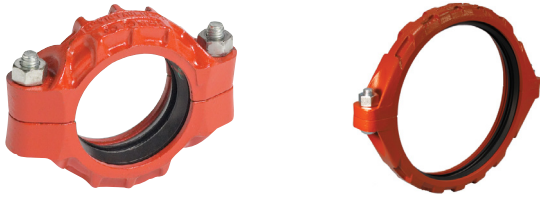


Victaulic® Standard Flexible Coupling Style 77



¾ – 12"/20 – 300 mm sizes

14 – 24"/350 – 600 mm sizes

1.0 PRODUCT DESCRIPTION

Available Sizes

- ¾ – 24"/20 – 600 mm
- For 14 – 72"/350 – 1800 mm flexible roll groove systems, Victaulic recommends Style W77 AGS couplings. For more information, refer to Victaulic submittal [publication 20.03](#).

Maximum Working Pressure

- 1000 psi/6900 kPa.

Application

- This product joins standard roll grooved and cut grooved pipe.
- Provides a flexible pipe joint with allows for expansion, contraction and deflection.
- Operating temperature dependent upon gasket and/or seal selection - see Section 3.0.
- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic OGS groove profile (See section 7.0 for Reference Materials).

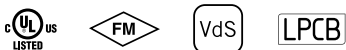
Pipe Material

- Carbon steel.
- For use with stainless steel pipe, refer to Victaulic submittal [publication 17.09](#) for pressure ratings and end loads.

Codes and Requirements

- Support hanger spacing correspond to ASME B31.1 Power Piping Code and ASME B31.9 Building Services Piping Code.

2.0 CERTIFICATION/LISTINGS



NOTES

- Refer to Victaulic submittal [publication 10.01](#) for details
- Refer to Victaulic submittal [publication 02.06](#) for potable water approvals if applicable.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

| | | | |
|--------------|--|----------|--|
| System No. | | Location | |
| Submitted By | | Date | |

| | | | |
|--------------|--|-----------|--|
| Spec Section | | Paragraph | |
| Approved | | Date | |

3.0 MATERIAL SPECIFICATIONS

Housing:

Ductile iron conforming to ASTM A536, Grade 65-45-12. Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

Housing Coating: (specify choice)

Standard: Orange enamel.

Optional: Hot dipped galvanized and others.

Gasket: (specify choice¹)

- NOTE: Additional gasket styles are available. Contact Victaulic for details.

Grade "E" EPDM

EPDM (Green stripe color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. NOT COMPATIBLE FOR PETROLEUM SERVICES.

Grade "T" Nitrile

Nitrile (Orange stripe color code). Temperature range -20°F to +180°F/-29°C to +82°C. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not compatible for hot water services over +150°F/+66°C or for hot dry air over +140°F/+60°C.

- ¹ Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest [Victaulic Gasket Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts: (specify choice)

Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449.

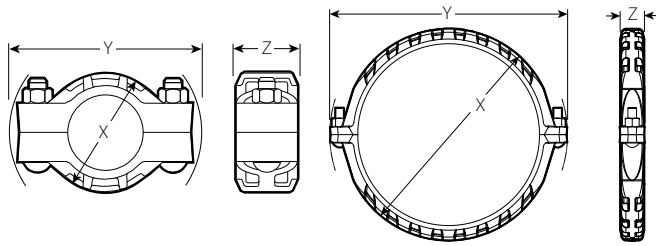
Carbon steel heavy hex nuts meeting the mechanical property requirements of ASTM A563 Grade B. Track bolts and heavy hex nuts are zinc electroplated per ASTM B633 ZN/FE5, finish Type III (imperial) or Type II (metric).

Optional:² Bolts – Stainless steel, meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Nuts – Stainless Steel meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating.

- ² Optional bolts/nuts are available in imperial size only.

4.0 DIMENSIONS

Style 77



¾ – 12"/20 – 300 mm sizes

14 – 24"/350 – 600 mm sizes

| Size | | Working Pressure ³ | End Load ³ | Pipe End Separation ⁴ | Deflection from Centerline ⁴ | | Bolt/Nut ⁵ | | Dimensions | | | Weight |
|--------------|-------------------------|-------------------------------|-----------------------|----------------------------------|---|--------------------|-----------------------|-----------|--------------|--------------|--------------|----------------|
| Nominal | Actual Outside Diameter | Maximum | Maximum | Allowable | Per Cplg. | Pipe | Qty. | Size | X | Y | Z | Approx. (Each) |
| inches DN | inches mm | psi kPa | lb N | inches mm | Degrees | inches/ft. mm/m | | inches | inches mm | inches mm | inches mm | lb kg |
| ¾ DN20 | 1.050 26.7 | 1000 6900 | 865 3850 | 0–0.06 0–1.6 | 3°–24' | 0.72 60 | 2 | ¾ x 2 | 2.13 54 | 4.00 102 | 1.75 44 | 1.1 0.5 |
| 1 DN25 | 1.315 33.4 | 1000 6900 | 1,360 6050 | 0–0.06 0–1.6 | 2°–43' | 0.57 48 | 2 | ¾ x 2 | 2.38 61 | 4.12 105 | 1.75 44 | 1.2 0.5 |
| 1¼ DN32 | 1.660 42.2 | 1000 6900 | 2,160 9610 | 0–0.06 0–1.6 | 2°–10' | 0.45 38 | 2 | ½ x 2½ | 2.65 67 | 5.00 127 | 1.88 48 | 2.0 0.9 |
| 1½ DN40 | 1.900 48.3 | 1000 6900 | 2,835 12615 | 0–0.06 0–1.6 | 1°–56' | 0.40 33 | 2 | ½ x 2½ | 3.13 79 | 5.38 137 | 1.88 48 | 2.1 1.0 |
| 2 DN50 | 2.375 60.3 | 1000 6900 | 4,430 19715 | 0–0.06 0–1.6 | 1°–31' | 0.32 26 | 2 | ½ x 2½ | 3.63 92 | 5.88 149 | 1.88 48 | 2.6 1.2 |
| | 2.664 57.0 | 1000 6900 | 3955 17592 | 0–0.06 0–1.6 | 1°–34' | 0.33 27 | 2 | ½ x 2½ | 3.43 87 | 5.73 146 | 1.90 48 | 3.0 1.4 |
| 2½ | 2.875 73.0 | 1000 6900 | 6,490 28880 | 0–0.06 0–1.6 | 1°–15' | 0.26 22 | 2 | ½ x 2¾ | 4.25 108 | 6.50 165 | 1.88 48 | 3.1 1.4 |
| DN65 | 3.000 76.1 | 1000 6900 | 7,070 31460 | 0–0.06 0–1.6 | 1°–12' | 0.26 22 | 2 | ½ x 2¾ | 4.38 111 | 6.63 168 | 1.88 48 | 3.2 1.5 |
| 3 DN80 | 3.500 88.9 | 1000 6900 | 9,620 46810 | 0–0.06 0–1.6 | 1°–2' | 0.22 18 | 2 | ½ x 2¾ | 5.00 127 | 7.13 181 | 1.88 48 | 3.7 1.7 |
| 3½ DN90 | 4.000 101.6 | 1000 6900 | 12,565 55915 | 0–0.06 0–1.6 | 0°–54' | 0.19 16 | 2 | ⅝ x 3¼ | 5.63 143 | 8.25 210 | 1.88 48 | 5.6 2.5 |
| 4 DN100 | 4.500 114.3 | 1000 6900 | 15,900 70755 | 0–0.13 0–3.2 | 1°–36' | 0.34 28 | 2 | ⅝ x 3¼ | 6.13 156 | 8.88 226 | 2.13 54 | 6.7 3.0 |
| | 4.250 108.0 | 1000 6900 | 14,180 63100 | 0–0.13 0–3.2 | 1°–41' | 0.35 29 | 2 | 16 x 82.5 | 6.00 152 | 8.63 219 | 2.13 54 | 11.0 5.0 |
| 5 | 5.563 141.3 | 1000 6900 | 24,300 108135 | 0–0.13 0–3.2 | 1°–18' | 0.27 23 | 2 | 2–¾ x 4¼ | 7.75 197 | 10.65 270 | 2.13 54 | 10.6 4.8 |

3 Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard **roll** or **cut** grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

4 Allowable Pipe End Separation and Deflection figures show the maximum nominal range of movement available at each joint for standard **roll** grooved pipe. Figures for standard **cut** grooved pipe may be doubled. These figures are maximums; for design and installation purposes these figures should be reduced by: 50% for ¾ – 3 ½"/20 – 90 mm; 25% for 4"/100 mm and larger.

5 Number of bolts required equals number of housing segments.

6 Couplings 8, 10, 12"/200, 250, 300 mm sizes available to JIS standards. Refer to Victaulic submittal [publication 06.17](#) for details.

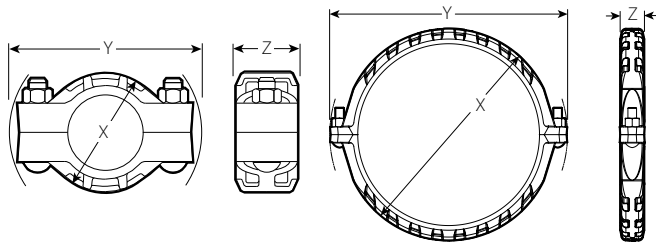
7 For 14 – 72"/350 – 1800 mm Roll Groove systems Victaulic offers the Advanced Groove System (AGS) line of products. Refer to Victaulic submittal [publication 20.03](#) for information on the Style W77 flexible AGS coupling.

NOTES

- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

4.0 DIMENSIONS

Style 77



¾ – 12"/20 – 300 mm sizes

14 – 24"/350 – 600 mm sizes

| Size | | Working Pressure ³ | End Load ³ | Pipe End Separation ⁴ | Deflection from Centerline ⁴ | | Bolt/Nut ⁵ | | Dimensions | | | Weight |
|--------------------------|-----------------------------------|-------------------------------|-----------------------|----------------------------------|---|----------------------|-----------------------|-------------|--------------|--------------|-------------|----------------------|
| Nominal inches DN | Actual Outside Diameter inches mm | Maximum psi kPa | Maximum lb N | Allowable inches mm | Per Cplg. Degrees | Pipe inches/ft. mm/m | Qty. | Size inches | X inches mm | Y inches mm | Z inches mm | Approx. (Each) lb kg |
| | 5.250 133.0 | 1000 6900 | 21,635 96275 | 0–0.13 0–3.2 | 1°–21' | 0.28 24 | 2 | 20 x 108 | 7.63 194 | 10.38 264 | 2.13 54 | 10.0 4.5 |
| DN125 | 5.500 139.7 | 1000 6900 | 23,745 105665 | 0–0.13 0–3.2 | 1°–18' | 0.28 24 | 2 | 20 x 108 | 8.63 219 | 10.65 270 | 2.13 54 | 10.0 4.5 |
| 6 DN150 | 6.625 168.3 | 1000 6900 | 34,470 153390 | 0–0.13 0–3.2 | 1°–5' | 0.23 18 | 2 | ¾ x 4¼ | 8.63 219 | 11.88 302 | 2.13 54 | 12.0 5.4 |
| | 6.250 159.0 | 1000 6900 | 30,665 136460 | 0–0.13 0–3.2 | 1°–9' | 0.24 20 | 2 | 20 x 108 | 8.63 219 | 11.50 292 | 2.13 54 | 13.2 6.0 |
| | 6.500 165.1 | 1000 6900 | 33,185 147660 | 0–0.13 0–3.2 | 1°–6' | 0.23 19 | 2 | ¾ x 4¼ | 8.88 226 | 11.63 295 | 2.13 54 | 13.2 6.0 |
| 8 ⁵ DN200 | 8.625 219.1 | 800 5500 | 46,740 207995 | 0–0.13 0–3.2 | 0°–50' | 0.18 14 | 2 | 7/8 x 5 | 11.00 279 | 14.75 375 | 2.50 63 | 20.8 9.4 |
| 10 ⁵ DN250 | 10.750 273.0 | 800 5500 | 73,280 326100 | 0–0.13 0–3.2 | 0°–40' | 0.14 12 | 2 | 1 x 6 | 13.63 346 | 17.13 435 | 2.63 67 | 27.8 12.6 |
| 12 ⁵ DN300 | 12.750 323.9 | 800 5500 | 102,000 453900 | 0–0.13 0–3.2 | 0°–34' | 0.12 9 | 2 | 1 x 6½ | 15.63 397 | 19.25 489 | 2.63 67 | 31.1 14.1 |
| 14 ⁶ DN350 | 14.000 355.6 | 300 2065 | 46,180 205500 | 0–0.13 0–3.2 | 0°–31' | 0.11 9 | 2 | 1 x 3½ | 16.75 425 | 20.25 514 | 3.00 76 | 39.2 17.8 |
| | 14.842 377.0 | 300 2065 | 51,875 230,845 | 0–0.13 0–3.2 | 0°–31' | 0.11 9 | 2 | 1 x 3½ | 17.39 442 | 20.96 531 | 2.80 71 | 48.8 22.1 |
| 16 ⁶ DN400 | 16.000 406.4 | 300 2065 | 60,320 268425 | 0–0.13 0–3.2 | 0°–27' | 0.10 9 | 2 | 1 x 3½ | 18.75 476 | 22.25 565 | 3.00 76 | 45 20.4 |
| | 16.772 426.0 | 300 2065 | 66,245 294,795 | 0–0.13 0–3.2 | 0°–27' | 0.10 9 | 2 | 1 x 3½ | 19.69 500 | 22.92 581 | 2.92 74 | 56.7 25.7 |
| 18 ⁶ DN450 | 18.000 457.2 | 300 2065 | 76,340 339710 | 0–0.13 0–3.2 | 0°–24' | 0.08 7 | 2 | 1½ x 4 | 21.56 548 | 25.00 635 | 3.13 80 | 64.1 29.1 |
| | 18.898 480.0 | 300 2065 | 84,105 374,265 | 0–0.13 0–3.2 | 0°–24' | 0.08 7 | 2 | 1½ x 4 | 22.38 569 | 25.86 655 | 3.04 77 | 77.2 35 |

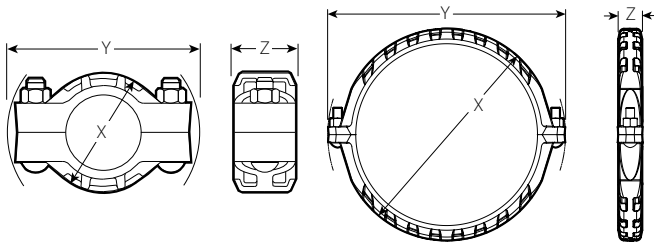
- Working Pressure and End Load are total, from all internal and external loads, based on standard weight (ANSI) steel pipe, standard **roll** or **cut** grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.
- Allowable Pipe End Separation and Deflection figures show the maximum nominal range of movement available at each joint for standard **roll** grooved pipe. Figures for standard **cut** grooved pipe may be doubled. These figures are maximums; for design and installation purposes these figures should be reduced by: 50% for ¾ – 3 ½"/20 – 90 mm; 25% for 4"/100 mm and larger.
- Number of bolts required equals number of housing segments.
- Couplings 8, 10, 12"/200, 250, 300 mm sizes available to JIS standards. Refer to Victaulic submittal [publication 06.17](#) for details.
- For 14 – 72"/350 – 1800 mm Roll Groove systems Victaulic offers the Advanced Groove System (AGS) line of products. Refer to Victaulic submittal [publication 20.03](#) for information on the Style W77 flexible AGS coupling.

NOTES

- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

4.0 DIMENSIONS

Style 77



¾ – 12"/20 – 300 mm sizes

14 – 24"/350 – 600 mm sizes

| Size | | Working Pressure ³ | End Load ³ | Pipe End Separation ⁴ | Deflection from Centerline ⁴ | | Bolt/Nut ⁵ | | Dimensions | | | Weight |
|--------------------------|--|-------------------------------|-----------------------|----------------------------------|---|--------------------|-----------------------|--------|--------------|--------------|--------------|----------------|
| Nominal | Actual Outside Diameter | Maximum | Maximum | Allowable | Per Cplg. | Pipe | Qty. | Size | X | Y | Z | Approx. (Each) |
| inches DN | inches mm | psi kPa | lb N | inches mm | Degrees | inches/ft. mm/m | | inches | inches mm | inches mm | inches mm | lb kg |
| 20 ⁶ DN500 | 20.000 508.0 | 300 2065 | 94,000 418300 | 0–0.13 0–3.2 | 0°–22' | 0.08 7 | 2 | 1½ x 4 | 23.63 600 | 27.00 686 | 3.13 80 | 74.8 34 |
| 22 DN550 | 22.000 559.0 | 300 2065 | 114,000 507300 | 0–0.13 0–3.2 | 0°–19' | 0.07 6 | 2 | 1½ x 4 | 25.63 651 | 29.13 740 | 3.13 80 | 82.6 37.5 |
| | 20.866 530.0 | 300 2065 | 102,535 456,280 | 0–0.13 0–3.2 | 0°–22' | 0.08 7 | 2 | 1½ x 4 | 24.29 617 | 27.80 704 | 3.07 77 | 91.7 41.6 |
| | 22.835 580.0 | 300 2065 | 102,380 455,591 | 0–0.13 0–3.2 | 0°–19' | 0.07 6 | 2 | 1½ x 4 | 26.76 680 | 30.01 762 | 3.12 79 | 92.8 42.2 |
| 24 ⁶ DN600 | 24.000 609.6 | 250 1725 | 113,000 502850 | 0–0.13 0–3.2 | 0°–18' | 0.07 6 | 2 | 1½ x 4 | 27.75 705 | 31.00 787 | 3.19 81 | 89.6 40.7 |
| | 24.803 630.0 | 250 1725 | 102,790 457,416 | 0–0.13 0–3.2 | 0°–18' | 0.07 6 | 2 | 1½ x 4 | 28.42 722 | 32.16 817 | 3.12 79 | 96.8 44 |
| 14–72 DN350– 1800 | <p style="text-align: center;">AGS See Style W77, refer to Victaulic submittal publication 20.03</p> <p style="text-align: center;">AGS™</p> | | | | | | | | | | | |

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- 5 Number of bolts required equals number of housing segments.
- 6 Couplings 8, 10, 12"/200, 250, 300 mm sizes available to JIS standards. Refer to Victaulic submittal [publication 06.17](#) for details.
- 7 For 14 – 72"/350 – 1800 mm Roll Groove systems Victaulic offers the Advanced Groove System (AGS) line of products. Refer to Victaulic submittal [publication 20.03](#) for information on the Style W77 flexible AGS coupling.

NOTES

- Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

5.0 PERFORMANCE

Not applicable – contact Victaulic with any questions.

6.0 NOTIFICATIONS

WARNING

- **Victaulic RX roll sets must be used when grooving light-wall/thin-wall stainless steel pipe for use with Victaulic Couplings.**

Failure to use Victaulic RX roll sets when grooving light-wall/thin-wall stainless steel pipe may cause joint failure, resulting in serious personal injury and/or property damage.

NOTICE

- **Victaulic RX grooving rolls must be ordered separately. They are identified by a silver color and the designation RX on the front of the roll sets.**

7.0 REFERENCE MATERIALS

- [20.03: AGS Flexible Coupling Style W77](#)
- [17.09: Pressure Ratings and End Loads for Victaulic Ductile Iron Grooved Couplings on Stainless Steel Pipe](#)
- [26.04: Victaulic Couplings Vibration Attenuation Characteristics](#)
- [26.12: Design Data for Seismic Applications of Victaulic Grooved System](#)
- [17.01: Pipe Preparation for Use on Stainless Steel Pipe With Victaulic Products](#)
- [10.01: Victaulic® Products for Fire Protection Piping Systems - Regulatory Approval Reference Guide](#)
- [02.06: Potable Water Approvals ANSI/NSF](#)
- [05.01: Seal Selection Guide](#)
- [06.17: Couplings and Fittings for JIS Pipe](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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