

Stainless Steel Flexible Coupling

Style 77S



1.0 PRODUCT DESCRIPTION

Available Sizes

- ¾" – 18"/DN20 – DN450

Maximum Working Pressure

- Up to 750psi/5171kPa
- Working pressure dependent on material, wall thickness and size of pipe

Application

- Joins OGS roll grooved and cut grooved pipe, as well as OGS grooved fittings, valves and accessories.

Pipe Materials

- Stainless steel pipe

NOTE

- For Duplex or Super Duplex Stainless Steel, please see [publication 17.20](#).

2.0 CERTIFICATION/LISTINGS



EN 10311
CPR (EU)
No. 305/2011



BS EN 10311
CPR (UK)
2019 No. 465

NOTES

- See [publication 10.01](#) for Fire Protection Certifications/Listings Reference Guide.
- See [publication 02.06](#): Victaulic Potable Water Approvals ANSI/NSF for potable water approvals if applicable.

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

3.0 SPECIFICATIONS – MATERIAL

Housing: Type 316 stainless steel, conforming to ASTM-A351, A743, and A744 Grade CF8M.

Gasket: (specify choice¹)

Grade "E" EPDM

EPDM (Green stripe color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for 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 USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

Grade "EF" EPDM²

EPDM (Green "X" color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for hot and cold water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Also meets hot and cold potable water requirements per DVGW W270, UBA Elastomer Guideline, ÖVGW, SVGW, and French ACS approved for EN681-1 Type WA cold potable, and Type WB hot potable water service. WRAS approved material to BS 6920:2014 for cold and hot potable water service up to +149°F/+65°C. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

Grade "EW" EPDM

EPDM (Green W color code). Temperature range -30°F to +230°F/-34°C to +110°C. May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. WRAS approved material to BS 6920 for cold and hot potable water service up to +149°F/+65°C. 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 USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

Note: Grade "EW" gaskets are available 8 – 12"/DN200 – DN300 sizes only.

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 dry air over +140°F/+60°C and water over +150°F/+66°C. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**

Grade "O" Fluoroelastomer

Fluoroelastomer (Blue stripe color code). Temperature range +20°F to +300°F/-7°C to +149°C. May be specified for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**

Grade "A" White Nitrile

White nitrile (White gasket). Temperature range +20°F to +180°F/-7°C to +82°C. Meets FDA requirements. Conforms to CFR Title 21 Part 177.2600. Not compatible for hot water services over +150°F/+66°C or for hot, dry air over +140°F/+60°C. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**

Others

For alternate gasket selection, reference [publication 05.01](#): Victaulic Seal Selection Guide.

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 Seal Selection Guide](#) for specific gasket service guidelines and for a listing of services which are not compatible.

² Available exclusively in Europe.

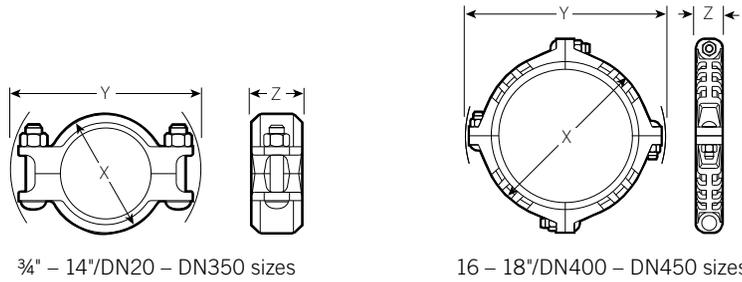
Bolts/Nuts:³

Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Stainless steel heavy nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling reducing coating.

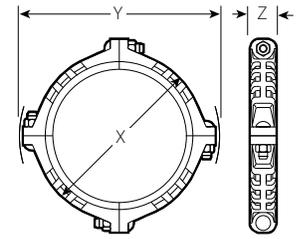
³ Bolts/nuts are available in imperial size only.

4.0 DIMENSIONS

Style 77S



3/4" – 14"/DN20 – DN350 sizes



16 – 18"/DN400 – DN450 sizes

Size		Pipe End Separation ⁴		Deflection from Centerline		Bolt/Nut		Dimensions			Weight
Nominal inches DN	Actual Outside Diameter inches mm	Min. inches mm	Max. inches mm	Per Coupling Degrees	pipe In/Ft. mm/m	Qty.	Size inches	X inches mm	Y inches mm	Z inches mm	Approx. (Each) lb kg
3/4 DN20	1.050 26.9	0.00 0.0	0.06 1.5	3°-24'	0.72 60	2	3/8 X 2	2.13 53	4.00 99	1.75 44	1.2 0.5
1 DN25	1.315 33.7	0.00 0.0	0.06 1.5	2°-43'	0.57 47	2	3/8 X 2	2.63 65	4.50 115	1.75 43	1.6 0.7
1 1/4 DN32	1.660 42.4	0.00 0.0	0.06 1.5	2°-10'	0.45 37	2	3/8 X 2	2.88 73	4.88 122	1.88 45	1.9 0.9
1 1/2 DN40	1.900 48.3	0.00 0.0	0.06 1.5	1°-56'	0.40 33	2	3/8 X 2	3.25 83	4.88 122	1.88 45	2.1 1.0
2 DN50	2.375 60.3	0.00 0.0	0.06 1.5	1°-31'	0.32 27	2	3/8 X 2	3.75 94	5.38 136	1.88 47	2.5 1.1
2 1/2 DN60	2.875 73.0	0.00 0.0	0.06 1.5	1°-15'	0.26 22	2	3/8 X 2	4.25 107	5.88 148	1.88 47	2.9 1.3
3 DN80	3.500 88.9	0.00 0.0	0.06 1.5	1°-2'	0.22 18	2	1/2 X 2.75	4.88 123	7.00 178	1.88 47	4.1 1.9
4 DN100	4.500 114.3	0.00 0.0	0.13 3.3	1°-36'	0.34 28	2	1/2 X 2.75	6.00 151	8.25 209	2.13 53	6.7 3.0
6 DN150	6.625 168.3	0.00 0.0	0.13 3.3	1°-12'	0.21 17	2	5/8 X 3.25	8.38 211	11.13 281	2.13 53	8.5 3.9
8 DN200	8.625 219.1	0.00 0.0	0.13 3.3	0°-50'	0.18 15	2	7/8 X 5	11.38 289	14.75 375	2.50 62	23.5 10.7
10 DN250	10.750 273.0	0.00 0.0	0.13 3.3	0°-40'	0.14 12	2	1 X 6	13.50 343	17.38 441	2.63 67	33.0 15.0
12 DN300	12.750 323.9	0.00 0.0	0.13 3.3	0°-34'	0.12 10	2	1 X 6-1/2	15.50 394	19.25 487	2.63 66	35.0 15.9
14 DN350	14.000 355.6	0.00 0.0	0.13 3.3	0°-31'	0.11 9	2	1 X 6-1/2	16.63 421	20.50 520	2.88 72	37.0 16.8
16 DN400	16.000 406.4	0.00 0.0	0.13 3.3	0°-27'	0.10 8	4	1 X 5-1/2	19.00 482	22.63 573	3.00 75	53.0 24.0
18 DN450	18.000 457.2	0.00 0.0	0.13 3.3	0°-24'	0.08 7	4	1 X 5-1/2	21.25 540	24.63 626	3.13 78	62.0 28.1

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 3/4" – 3 1/2"/DN20 – DN90; 25% for 4"/DN100 and larger.

5.0 PERFORMANCE

Performance on ANSI Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness		Groove Type	Maximum	
		inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
¾ DN20	1.050 26.9	0.113 2.9	40S	ST	750 5171	649 2889
		0.083 2.1	10S	RX	500 3447	433 1926
		0.065 1.7	5S	RX	325 2241	281 1252
1 DN25	1.315 33.7	0.133 3.4	40S	ST	750 5171	1019 4531
		0.109 2.8	10S	RX	500 3447	679 3021
		0.065 1.7	5S	RX	325 2241	441 1963
1 ¼ DN32	1.660 42.4	0.140 3.6	40S	ST	750 5171	1623 7220
		0.109 2.8	10S	RX	500 3447	1082 4814
		0.065 1.7	5S	RX	325 2241	703 3129
1 ½ DN40	1.900 48.3	0.145 3.7	40S	ST	750 5171	2126 9459
		0.109 2.8	10S	RX	500 3447	1418 6306
		0.065 1.7	5S	RX	325 2241	921 4099
2 DN50	2.375 60.3	0.154 3.9	40S	ST	750 5171	3323 14780
		0.109 2.8	10S	RX	500 3447	2215 9853
		0.065 1.7	5S	RX	325 2241	1440 6405
2 ½	2.875 73.0	0.203 5.2	40S	ST	750 5171	4869 21658
		0.120 3.0	10S	RX	500 3447	3246 14438
		0.083 2.1	5S	RX	325 2241	2110 9385
3 DN80	3.500 88.9	0.216 5.5	40S	ST	750 5171	7216 32098
		0.120 3.0	10S	RX	400 2758	3848 17119
		0.083 2.1	5S	RX	250 1724	2405 10699

⁵ Working Pressure and End Load are total, from all internal and external loads, based on Types 304/304L and 316/316L stainless steel pipe, grooved in accordance with Victaulic specifications.

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"

Std= Standard roll set marked with the prefix "R"

C= Cut groove

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.
- Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
- For pressure ratings on wall thicknesses not mentioned, please contact Victaulic.

5.0 PERFORMANCE (CONTINUED)

Performance on ANSI Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness		Groove Type	Maximum	
		inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
4 DN100	4.500 114.3	0.237 6.0	40S	ST	400 2758	6362 28298
		0.237 6.0	40S	C	600 4137	9543 42448
		0.120 3.0	10S	RX	350 2413	5567 24761
		0.083 2.1	5S	RX	225 1551	3578 15918
6 DN150	6.625 168.3	0.280 7.1	40S	ST	300 2068	10341 46001
		0.280 7.1	40S	C	500 3447	17236 76669
		0.134 3.4	10S	RX	200 1379	6894 30667
		0.109 2.8	5S	RX	125 862	4309 19167
8 DN200	8.625 219.1	0.322 8.2	40S	ST	300 2068	17528 77968
		0.322 8.2	40S	C	400 2758	23371 103957
		0.148 3.8	10S	RX	125 862	7303 32487
		0.109 2.8	5S	RX	75 517	4382 19492
10 DN250	10.750 273.0	0.365 9.3	40S	ST	300 2068	27229 121120
		0.365 9.3	40S	C	400 2758	36305 161493
		0.165 4.2	10S	RX	125 862	11345 50467
		0.134 3.4	5S	RX	75 517	6807 30280
12 DN300	12.750 323.9	0.375 9.5	40S	ST	300 2068	38303 170380
		0.375 9.5	40S	C	400 2758	51071 227173
		0.180 4.6	10S	RX	125 862	15960 70992
		0.156 4.0	5S	RX	75 517	9576 42595

⁵ Working Pressure and End Load are total, from all internal and external loads, based on Types 304/304L and 316/316L stainless steel pipe, grooved in accordance with Victaulic specifications.

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"

Std= Standard roll set marked with the prefix "R"

C= Cut groove

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.
- Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
- For pressure ratings on wall thicknesses not mentioned, please contact Victaulic.

5.0 PERFORMANCE (CONTINUED)

Performance on ANSI Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness		Groove Type	Maximum	
		inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
14 DN350	14.000 355.6	0.375 9.5	40S	C	200 1379	30788 136950
		0.188 4.8	10S	RX	100 689	15394 68475
		0.156 4.0	5S	RX	65 448	10006 44509
16 DN400	16.000 406.4	0.375 9.5	40S	C	125 862	25133 111796
		0.188 4.8	10S	RX	45 310	9048 40247
		0.165 4.2	5S	RX	35 241	7037 31303
18 DN450	18.000 457.2	0.375 9.5	40S	C	100 689	25447 113193
		0.188 4.8	10S	RX	40 276	10179 45277
		0.165 4.2	5S	RX	30 207	7634 33958

⁵ Working Pressure and End Load are total, from all internal and external loads, based on Types 304/304L and 316/316L stainless steel pipe, grooved in accordance with Victaulic specifications.

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"

Std= Standard roll set marked with the prefix "R"

C= Cut groove

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.
- Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
- For pressure ratings on wall thicknesses not mentioned, please contact Victaulic.

5.1 PERFORMANCE

Performance on ISO Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Pipe Wall Thickness inches mm	Groove Type	Maximum	
				Working Pressure ⁶ psi kPa	End Load ⁶ lb N
8 DN200	8.625 219.1	0.492 12.5	C	300 2068	17528 77968
		0.315 8.0	ST / C	300 2068	17528 77968
		0.256 6.5	ST / C	232 1600	13555 60295
		0.248 6.3	ST / C	232 1600	13555 60295
		0.197 5.0	ST	175 1207	10225 45481
		0.157 4.0	ST	125 862	7303 32487
		0.142 3.6	RX	100 689	5843 25989
		0.126 3.2	RX	100 689	5843 25989
		0.118 3.0	RX	75 517	4382 19492
10 DN250	10.750 273.0	0.559 14.2	C	300 2068	27229 121120
		0.492 12.5	C	300 2068	27229 121120
		0.394 10.0	C	300 2068	27229 121120
		0.248 6.3	ST / C	200 1379	18153 80746
		0.157 4.0	RX	100 689	9076 40373
		0.142 3.6	RX	75 517	6807 30280
12 DN300	12.750 323.9	0.492 12.5	C	300 2068	38303 170380
		0.394 10.0	C	300 2068	38303 170380
		0.280 7.1	ST / C	125 862	15960 70992
		0.197 5.0	RX	75 517	9576 42595
		0.177 4.5	RX	75 517	9576 42595
		0.157 4.0	RX	75 517	9576 42595

⁶ Working Pressure and End Load are total, from all internal and external loads, based on ANSI B36.10 sized carbon steel pipe, grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"

Std= Standard roll set marked with the prefix "R"

C= Cut groove

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1 ½ times the figures shown.
- Metric thread size bolts are available for all coupling sizes upon request. Contact Victaulic for details.
- WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.
- For pressure ratings on wall thicknesses not mentioned, please contact Victaulic.

6.0 NOTIFICATIONS

WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping 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.
- Wear safety glasses, hardhat, and foot protection.

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

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.

WARNING

- Victaulic recommends the use of Victaulic fittings with Style 77S couplings.

Failure to follow this instruction could cause improper product installation, resulting in personal injury and/or property damage.

7.0 REFERENCE MATERIALS

[02.06: Victaulic® Potable Water Approvals ANSI/NSF](#)

[05.01: Victaulic® Seal Selection Guide](#)

[17.01: Victaulic® Stainless Steel Pipe End Preparation](#)

[26.01: Victaulic® Design Data](#)

[29.01: Victaulic® Terms and Conditions of Sale](#)

[I-100: Victaulic® Field Installation Handbook](#)

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, 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 [I-100 Victaulic Field Installation Handbook](#) or the 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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