

# Victaulic® Duplex Grooved Couplings

## Style 77DX Duplex Stainless Steel Flexible Coupling



### 1.0 PRODUCT DESCRIPTION

#### Available Sizes:

- ¾ – 6"/DN20 – DN150

#### NOTE

- For 8 – 18"/DN200 – DN450 sizes, Victaulic offers stainless steel couplings. See [publication 17.03](#) for the Style 77S Stainless Steel Flexible Coupling.

#### Maximum Working Pressure:

- Up to 1200 psi/8273 kPa on ANSI wall thickness
- Up to 750 psi/5171 kPa on ISO wall thickness

#### Application:

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

#### Pipe Material:

- Roll grooved Type 304/316 stainless steel
- Cut grooved duplex/super duplex stainless steel

### 2.0 CERTIFICATION/LISTINGS

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2008.

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 SPECIFICATIONS – MATERIAL

**Housing:** Duplex stainless steel (CE8MN) conforming to ASTM A890. Super duplex stainless steel (CE3MN) conforming to ASTM A890 is available upon special request.

**Gasket (specify choice)<sup>1</sup>:**

**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” EPDM<sup>2</sup>**

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.

**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, hydrocarbons, 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. No carbon black content. 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.

**Other**

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

<sup>1</sup> 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.  
<sup>2</sup> Available exclusively in Europe.

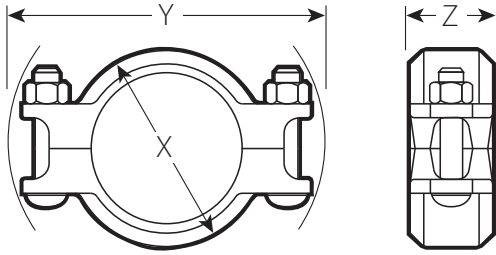
**Bolts/Nuts: (specify choice)<sup>3</sup>:**

Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW. Silicon bronze heavy hex nut meeting the requirements of ASME/ANSI B18.2.2 and ASTM F467 Type 651. Stainless steel flat washer meeting the requirements of ASME/ANSI B18.21.1, Type 316.

Optional: Stainless steel heavy hex nuts meeting the mechanical property requirements of ASTM F594, Group 2 (316 stainless steel), condition CW, with galling-reducing coating.

<sup>3</sup> Bolts/nuts are available in imperial size only.

## 4.0 DIMENSIONS



Size		Pipe End Separation <sup>3</sup>	Deflection from Centerline <sup>3</sup>		Bolt/Nut		Dimensions			Weight
Nominal inches DN	Actual Outside Diameter inches mm	Allowable inches mm	Per Coupling degrees	Pipe inches/ft mm/m	Qty.	Size inches	X inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
¾ DN20	1.050 26.9	0 – 0.06 0 – 1.6	3° - 24'	0.72 60	2	¾ X 2	2.08 53	3.89 99	1.70 43	1.2 0.6
1 DN25	1.315 33.7	0 – 0.06 0 – 1.6	2° - 43'	0.57 48	2	¾ X 2	2.54 65	4.50 114	1.66 42	1.6 0.7
1 ¼ DN32	1.660 42.4	0 – 0.06 0 – 1.6	2° - 10'	0.45 38	2	¾ X 2	2.87 73	4.79 122	1.76 45	1.9 0.9
1 ½ DN40	1.900 48.3	0 – 0.06 0 – 1.6	1° - 56'	0.40 33	2	¾ X 2	3.24 82	4.80 122	1.76 45	2.1 1.0
2 DN50	2.375 60.3	0 – 0.06 0 – 1.6	1° - 31'	0.32 26	2	¾ X 2	3.70 94	5.33 135	1.84 47	2.5 1.1
2 ½ DN60	2.875 73.0	0 – 0.06 0 – 1.6	1° - 15'	0.26 22	2	¾ X 2	4.20 107	5.79 147	1.84 47	2.9 1.3
3 DN80	3.500 88.9	0 – 0.06 0 – 1.6	1° - 2'	0.22 18	2	½ X 2 ¾	4.83 123	6.99 178	1.84 47	4.1 1.9
4 DN100	4.500 114.3	0 – 0.13 0 – 3.2	1° - 36'	0.34 28	2	⅝ X 3 ½	5.93 151	9.00 229	2.06 52	6.7 3.0
6 DN150	6.625 168.3	0 – 0.13 0 – 3.2	1° - 12'	0.21 18	2	⅝ X 3 ¼	8.30 211	11.06 281	2.06 52	8.5 3.9
8 – 18 DN200 – DN450	For 8 – 18"/DN200 – DN450 sizes Victaulic offers stainless steel couplings. See publication 17.03 for the Style 77S Stainless Steel Flexible Coupling.									

<sup>3</sup> 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"/DN20 – DN90; 25% for 4"/DN100 and larger.

## 5.0 PERFORMANCE

### Performance on ANSI Wall Thicknesses

Size		Pipe Wall Thickness		Groove Type	Maximum	
Nominal	Actual Outside Diameter	inches mm	ANSI Schedule Number		Working Pressure	End Load
inches DN	inches mm				psi kPa	lbs N
¾ DN20	1.050 26.9	0.154 3.9	80S	C	750 5171	649 2,889
		0.114 2.9	Duplex/Super Duplex 40S	C	1200 8273	1000 4,450
		0.114 2.9	40S	Std/C	750 5171	649 2,889
		0.083 2.1	10S	RX	500 3447	433 1,927
		0.065 1.6	5S	RX	500 3447	433 1,927
1 DN25	1.315 33.7	0.193 4.9	80S	C	750 5171	1019 4,531
		0.133 3.4	Duplex/Super Duplex 40S	C	1200 8273	1600 7,120
		0.142 3.6	40S	Std/C	750 5171	1019 4,531
		0.110 2.8	10S	RX	500 3447	680 3,023
		0.067 1.7	5S	RX	400 2758	543 2,416
1¼ DN32	1.660 42.4	0.193 4.9	80S	C	750 5171	1623 7,220
		0.140 3.6	Duplex/Super Duplex 40S	C	1200 8273	2500 11,120
		0.142 3.6	40S	Std/C	750 5171	1623 7,220
		0.110 2.8	10S	RX	500 3447	1083 4,817
		0.067 1.7	5S	RX	400 2758	866 3,851
1½ DN40	1.900 48.3	0.201 5.1	80S	C	750 5171	2126 9,459
		0.145 3.7	Duplex/Super Duplex 40S	C	1200 8273	3400 15,120
		0.146 3.7	40S	Std/C	750 5171	2126 9,459
		0.110 2.8	10S	RX	500 3447	1419 6,311
		0.067 1.7	5S	RX	400 2758	1134 5,045
2 DN50	2.375 60.3	0.217 5.5	80S	C	750 5171	3323 14,780
		0.154 3.9	Duplex/Super Duplex 40S	C	1200 8273	5300 23,575
		0.154 3.9	40S	Std/C	750 5171	3323 14,780
		0.110 2.8	10S	RX	500 3447	2217 9,861
		0.067 1.7	5S	RX	325 2241	1440 6,405

**NOTES**

- 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

5.0 PERFORMANCE (continued)

Performance on ANSI Wall Thicknesses

Size		Pipe Wall Thickness		Groove Type	Maximum	
Nominal	Actual Outside Diameter	inches mm	ANSI Schedule Number		Working Pressure	End Load
inches DN	inches mm				psi kPa	lbs N
2½	2.875 73.0	0.276 7.0	80S	C	750 5171	4869 21,658
		0.203 5.2	Duplex/Super Duplex 40S	C	1200 8273	7700 34,250
		0.205 5.2	40S	Std/C	750 5171	4869 21,658
		0.122 3.1	10S	RX	500 3447	3248 14,449
		0.083 2.1	5S	RX	325 2241	2110 9,386
3 DN80	3.500 88.9	0.299 7.6	80S	C	750 5171	7221 32,122
		0.216 5.5	Duplex/Super Duplex 40S	C	1200 8273	11500 51,150
		0.217 5.5	40S	Std/C	750 5171	7221 32,122
		0.122 3.1	10S	RX	500 3447	4814 21,415
		0.083 2.1	5S	RX	325 2241	3127 13,910
4 DN100	4.500 114.3	0.339 8.6	80S	C	750 5171	11937 53,100
		0.237 6.0	Duplex/Super Duplex 40S	C	1200 8273	19000 84,500
		0.236 6.0	40S	Std/C	750 5171	11937 53,100
		0.122 3.1	10S	RX	400 2758	6343 28,217
		0.083 2.1	5S	RX	250 1724	3979 17,700
6 DN150	6.625 168.3	0.432 10.9	80S	C	750 5171	25873 115,090
		0.280 7.1	Duplex/Super Duplex 40S	C	1200 8273	41397 184,143
		0.280 7.1	40S	Std/C	500 3447	17249 76,727
		0.134 3.4	10S	RX	200 1379	6875 30,579
		0.110 2.8	5S	RX	125 862	4310 19,171
8 – 18 DN200 – DN450	For 8 – 18"/DN200 – DN450 sizes Victaulic offers stainless steel couplings. See publication 17.03 for the Style 77S Stainless Steel Flexible Coupling.					

NOTES

- 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

## 5.1 PERFORMANCE

### Performance on ISO Wall Thicknesses

Size		Pipe Wall Thickness	Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm		Working Pressure psi kPa	End Load lbs N
¾ DN20	1.050 26.9	0.157 4.0	C	750 5171	649 2,889
		0.126 3.2	C	750 5171	649 2,889
		0.102 2.6	Std	650 4482	563 2,504
		0.079 2.0	RX	500 3450	433 1,927
		0.063 1.6	RX	500 3450	433 1,927
1 DN25	1.315 33.7	0.177 4.5	C	750 5171	1019 4,531
		0.126 3.2	Std	625 4313	849 3,779
		0.102 2.6	RX	475 3275	645 2,870
		0.091 2.3	RX	450 3103	611 2,719
		0.079 2.0	RX	425 2930	577 2,568
		0.063 1.6	RX	400 2758	543 2,416
1¼ DN32	1.660 42.4	0.197 5.0	C	750 5171	1623 7,220
		0.142 3.6	Std/C	750 5171	1623 7,220
		0.126 3.2	Std	625 4313	1354 6,021
		0.102 2.6	RX	475 3275	1028 4,573
		0.079 2.0	RX	425 2930	920 4,091
		0.063 1.6	RX	400 2758	866 3,851
1½ DN40	1.900 48.3	0.197 5.0	C	750 5171	2126 9,459
		0.142 3.6	Std/C	750 5171	2126 9,459
		0.126 3.2	Std	600 4137	1701 7,567
		0.102 2.6	RX	475 3275	1347 5,991
		0.079 2.0	RX	425 2930	1205 5,360
		0.063 1.6	RX	400 2758	1134 5,045

**NOTES**

- 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

5.1 PERFORMANCE (continued)

Performance on ISO Wall Thicknesses

Size		Pipe Wall Thickness	Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm		Working Pressure psi kPa	End Load lbs N
2 DN50	2.375 60.3	0.220 5.6	C	750 5171	3323 14,780
		0.157 4.0	Std/C	750 5171	3323 14,780
		0.142 3.6	Std	675 4654	2990 13,302
		0.126 3.2	Std	600 4137	2658 11,824
		0.114 2.9	Std	525 3620	2326 10,346
		0.102 2.6	RX	475 3275	2104 9,360
		0.091 2.3	RX	425 2930	1883 8,375
		0.079 2.0	RX	375 2586	1661 7,390
		0.063 1.6	RX	325 2241	1440 6,405
3 DN80	3.500 88.9	0.315 8.0	C	750 5171	7221 32,122
		0.220 5.6	Std/C	750 5171	7221 32,122
		0.157 4.0	Std	600 4137	5717 25,430
		0.142 3.6	Std	550 3792	5316 23,645
		0.126 3.2	Std	525 3620	4915 21,861
		0.114 2.9	RX	450 3103	4477 19,914
		0.102 2.6	RX	425 2930	3971 17,662
		0.091 2.3	RX	350 2413	3465 15,411
		0.079 2.0	RX	325 2241	3127 13,910
		0.063 1.6	RX	N/R	

NOTES

- 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

5.1 PERFORMANCE (continued)

Performance on ISO Wall Thicknesses

Size		Pipe Wall Thickness	Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm		Working Pressure psi kPa	End Load lbs N
4 DN100	4.500 114.3	0.346 8.8	C	750 5171	11937 53,100
		0.248 6.3	C	750 5171	11937 53,100
		0.177 4.5	Std	575 3964	9044 40,229
		0.142 3.6	Std	450 3103	7308 32,507
		0.114 2.9	RX	375 2586	5871 26,114
		0.102 2.6	RX	325 2241	5161 22,958
		0.079 2.0	RX	250 1724	3979 17,700
		0.063 1.6	RX	N/R	
6 DN150	6.625 168.3	0.433 11.0	C	750 5171	25873 115,090
		0.280 7.1	Std	750 5171	25873 115,090
		0.280 7.1	C	500 3450	17249 76,727
		0.197 5.0	Std	325 2241	10983 48,855
		0.177 4.5	Std	275 1896	9491 42,219
		0.157 4.0	Std	225 1551	7999 35,583
		0.126 3.2	RX	175 1207	6097 27,120
		0.118 3.0	RX	150 1034	5171 23,001
		0.102 2.6	RX	N/R	
		0.079 2.0	RX		
		0.063 1.6	RX		

NOTES

- RX = Roll Set for light wall stainless steel pipe marked with the prefix "RX"
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- C = Cut groove



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## 6.0 NOTIFICATIONS

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- Working Pressure and End Load are total, from all internal and external loads, based on stainless steel pipe, roll grooved with Victaulic rolls in accordance with Victaulic specifications. “RX” rolls must be used for Schedules 5S, 10S and 10. Standard rolls should be used for Schedule 40S and Standard Weight pipe. Contact Victaulic for performance on other pipe or cut grooved pipe. See [publication 24.01](#) for more information pertaining to tools.
  - **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.
  - 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.
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## 7.0 REFERENCE MATERIALS

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

[26.01: Victaulic® Design Data](#)

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

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

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### 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](http://www.victaulic.com).

### Warranty

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

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