

Victaulic® Duplex Stainless Steel Rigid Coupling

Style 489DX



17.33



1.0 PRODUCT DESCRIPTION

Available Sizes:

- 2 – 12"/DN50 – DN300

Maximum Working Pressure:

- 1200 psi/8273 kPa/83 bar

Application:

- Provides a rigid pipe joint designed to restrict axial or angular movement. Contact Victaulic for information on torsional resistance.
- This product joins Original Groove System (OGS) roll grooved and cut grooved pipe, as well as grooved fittings, valves and accessories

Pipe Material

- Stainless steel
 - Austenitic: 304, 316
 - Super Austenitic: 254SMO, AL6XN
 - Duplex: 2205
 - Super Duplex: 2507, Zeron 100

2.0 CERTIFICATION/LISTINGS

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2015.

NOTES

- The Style 489DX is NSF Certified 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.
- See [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 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.

Gaskets: (specify choice¹)

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-certified material with approved microbiological resistance 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 PETROLEUM 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. WRAS approved material to BS 6920 for cold and hot potable water service up to +149°F/+65°C. DVGW approved material per DVGW W 270, KTW 1.3.13, and EN 681-1 Type WA cold potable and Type WB hot potable water service. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

Grade “E” EPDM

EPDM (Green stripe color code). Temperature range -30°F to +250°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.**

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: (specify choice)

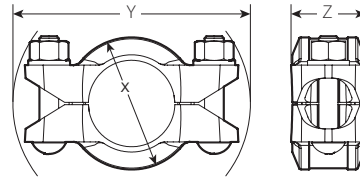
Standard: Stainless steel oval neck track bolts meeting the mechanical property requirements of ASTM F593, Group 2 (316 stainless steel), condition CW, with galling reducing coating. Silicon bronze heavy hex nuts meeting the requirements of ASME/ANSI B18.22, Type 651.

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.

Washers: ASME/ANSI B18.22.1, Type 316 stainless steel flat washer

4.0 DIMENSIONS

Style 489DX Rigid Coupling



Size		Pipe End Separation ³	Bolt/Nut ⁴		Nut Torque	Dimensions			Weight
Nominal	Actual Outside Diameter	Allowable	Qty.	Size		X	Y	Z	Approximate (Each)
inches DN	inches mm	inches mm		inches mm	inches mm	inches mm	inches mm	inches mm	lb kg
2 DN50	2.375 60.3	0.05 1.3	2	1/2 x 2 3/4	45 - 60 60 - 80	3.44 87.4	6.18 157.0	1.95 49.5	3.0 1.4
2 1/2	2.875 73.0	0.05 1.3	2	5/8 x 3 1/2	60 - 90 80 - 120	4.00 101.6	7.22 183.4	1.95 49.5	3.9 1.8
DN65	3.000 76.1	0.05 1.3	2	5/8 x 3 1/2	60 - 90 80 - 120	3.96 100.6	7.42 188.5	1.95 49.5	3.9 1.8
3 DN80	3.500 88.9	0.05 1.3	2	5/8 x 3 1/2	60 - 90 80 - 120	4.69 119.1	7.84 199.1	1.95 49.5	4.6 2.1
4 DN100	4.500 114.3	0.19 4.8	2	3/4 x 4 1/4	85 - 125 115 - 170	5.94 150.9	9.68 245.9	2.09 53.1	8.5 3.9
DN125	5.500 139.7	0.25 6.4	2	3/4 x 4 1/4	85 - 125 115 - 170	7.01 178.1	10.94 277.9	2.31 58.7	11.8 5.3
6 DN150	6.625 168.3	0.25 6.4	2	7/8 x 5 1/2	125 - 200 170 - 275	8.16 207.3	12.70 322.6	2.31 58.7	15.5 7.0
	6.500 165.1	0.25 6.4	2	7/8 x 5 1/2	125 - 200 170 - 275	8.03 204.0	12.70 322.6	2.31 58.7	15.5 7.0
8 DN200	8.625 219.1	0.25 6.4	2	1 x 5 1/2	200 - 300 275 - 400	10.62 269.7	15.04 382.0	2.62 66.5	24.0 10.9
10 DN250	10.750 273.0	0.25 6.4	2	1 x 6 1/2	250 - 350 339 - 475	13.09 332.5	17.29 439.2	2.69 68.3	33.0 15.0
12 DN300	12.750 323.9	0.25 6.4	2	1 x 6 1/2	250 - 350 339 - 475	15.13 384.3	19.13 485.9	2.81 71.4	40.0 18.1

³ For field installation only. Style 489DX is essentially rigid and does not permit expansion or contraction.

⁴ Metric thread size bolts are available (color coded gold) for all coupling sizes upon request. Contact Victaulic for details.

5.0 PERFORMANCE

Performance on ANSI wall thicknesses (Austenitic Pipe Materials)

Size		Pipe Wall Thickness		Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
2 DN50	2.375 60.3	0.218 5.5	80S	C	750 5171	3323 14780
		0.154 3.9	40S	Std/C	750 5171	3323 14780
		0.109 2.8	10S	RX	500 3447	2217 9861
		0.065 1.7	5S	RX	325 2241	1440 6405
2½	2.875 73.0	0.276 7.0	80S	C	750 5171	4869 21658
		0.203 5.2	40S	Std/C	750 5171	4869 21658
		0.120 3.1	10S	RX	500 3447	3248 14449
		0.083 2.1	5S	RX	325 2241	2110 9386
3 DN80	3.500 88.9	0.300 7.6	80S	C	750 5171	7216 32098
		0.216 5.5	40S	Std/C	750 5171	7216 32098
		0.120 3.1	10S	RX	500 3447	4814 21415
		0.083 2.1	5S	RX	325 2241	3127 13910
4 DN100	4.500 114.3	0.337 8.6	80S	C	750 5171	11928 53059
		0.237 6.0	40S	Std/C	750 5171	11928 53059
		0.120 3.1	10S	RX	400 2758	6362 28298
		0.083 2.1	5S	RX	250 1725	3979 17700
6 DN150	6.625 168.3	0.280 7.1	40S	Std/C	750 5171	25854 115003
		0.134 3.4	10S	RX	300 2068	10324 45925
		0.109 2.8	5S	RX	250 1724	8618 38334

⁵ Working Pressure and End Load are total, from all internal and external loads, roll or cut grooved in accordance with Victaulic specifications. Roll grooving shall use Victaulic roll sets.

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
- Contact Victaulic for performance on other 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.

5.0 PERFORMANCE (CONTINUED)

Performance on ANSI wall thicknesses (Austenitic Pipe Materials)

Size		Pipe Wall Thickness		Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
8 DN200	8.625 219.1	0.322 8.2	40S	Std/C	600 4136	35049 155903
		0.148 3.8	10S	RX	300 2068	17499 77838
		0.109 2.8	5S	RX	200 1379	11686 51980
10 DN250	10.750 273.0	0.365 9.3	40S	Std/C	600 4136	54446 242188
		0.165 4.2	10S	RX	300 2068	27184 120918
		0.134 3.4	5S	RX	250 1724	22691 100933
12 DN300	12.750 323.9	0.375 9.5	40S	Std/C	600 4136	76590 340687
		0.181 4.6	10S	RX	300 2068	38239 170097
		0.156 4.0	5S	RX	200 1379	25536 113590

⁵ Working Pressure and End Load are total, from all internal and external loads, roll or cut grooved in accordance with Victaulic specifications. Roll grooving shall use Victaulic roll sets.

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
- Contact Victaulic for performance on other 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.

5.1 PERFORMANCE

Performance on ANSI wall thickness (Super Austenitic, Duplex, and Super Duplex Pipe Materials)

Size		Pipe Wall Thickness		Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm	inches mm	ANSI Schedule Number		Working Pressure ⁵ psi kPa	End Load ⁵ lb N
2 DN50	2.375 60.3	0.154 3.9	Duplex/Super Duplex 40S	C	1200 8273	5316 23656
2½	2.875 73.0	0.203 5.2	Duplex/Super Duplex 40S	C	1200 8273	7790 34666
3 DN80	3.500 88.9	0.216 5.5	Duplex/Super Duplex 40S	C	1200 8273	11545 51375
4 DN100	4.500 114.3	0.237 6.0	Duplex/Super Duplex 40S	C	1200 8273	19084 84924
6 DN150	6.625 168.3	0.280 7.1	Duplex/Super Duplex 40S	C	1200 8273	41370 184030
8 DN200	8.625 219.1	0.322 8.2	Duplex/Super Duplex 40S	C	1200 8273	70110 311870
10 DN250	10.750 273.0	0.365 9.3	Duplex/Super Duplex 40S	C	1200 8273	108920 484500
12 DN300	12.750 323.9	0.375 9.5	Duplex/Super Duplex 40S	C	1200 8273	153210 681520

⁵ Working Pressure and End Load are total, from all internal and external loads, cut grooved in accordance with Victaulic specifications.

NOTES

- C = Cut groove
- Contact Victaulic for performance on other 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.

5.2 PERFORMANCE

Performance on ISO wall thicknesses (Austenitic Pipe Materials)

Size		Pipe Wall Thickness inches mm	Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm			Working Pressure ⁵ kPa psi	End Load ⁵ N lb
1 ½ DN40	1.900 48.3	0.197 5.0	C	5171 750	9459 2126
		0.197 3.6	Std/C	5171 750	9459 2126
		0.126 3.2	Std	4137 600	7567 1701
		0.102 2.6	RX	3275 475	5991 1347
		0.079 2.0	RX	2930 425	5360 1205
		0.063 1.6	RX	2758 400	5045 1134
2 DN50	2.375 60.3	0.220 5.6	C	5171 750	14780 3323
		0.157 4.0	Std/C	5171 750	14780 3323
		0.142 3.6	Std	4654 675	13302 2990
		0.126 3.2	Std	4137 600	11824 2658
		0.114 2.9	Std	3620 525	10346 2326
		0.102 2.6	RX	3275 475	9360 2104
		0.091 2.3	RX	2930 425	8375 1883
		0.079 2.0	RX	2586 375	7347 1652
DN65	3.000 76.1	0.280 7.1	C	5171 750	23582 5301
		0.252 6.4	C	5171 750	23582 5301
		0.197 5.0	Std/C	4482 650	20438 4595
		0.157 4.0	Std	3964 575	18079 4064
		0.142 3.6	Std	3792 550	17293 3888
		0.122 3.1	Std	3450 500	15733 3537
		0.114 2.0	RX	3275 475	14935 3358
		0.102 2.6	RX	2930 425	13363 3004
		0.091 2.3	RX	2413 350	11005 2474
		0.083 2.1	RX	2241 325	10220 2297
		0.079 2.9	RX	2241 325	10220 2297

Size		Pipe Wall Thickness inches mm	Groove Type	Maximum	
Nominal inches DN	Actual Outside Diameter inches mm			Working Pressure ⁵ kPa psi	End Load ⁵ N lb
3 DN80	3.500 88.9	0.315 8.0	C	5171 750	32098 7216
		0.220 5.6	Std/C	5171 750	32098 7216
		0.157 4.0	Std	4137 600	25678 5773
		0.142 3.6	Std	3792 550	23538 5292
		0.126 3.2	Std	3450 500	21398 4811
		0.114 2.9	RX	3275 475	20328 4570
		0.102 2.6	RX	2930 425	18189 4089
		0.091 2.3	RX	2413 350	14979 3367
4 DN100	4.500 114.3	0.079 2.0	RX	2241 325	13910 3127
		0.346 8.8	C	5171 750	53059 11928
		0.248 6.3	C	5171 750	53059 11928
		0.177 4.5	Std	3964 575	40679 9145
		0.142 3.6	Std	3103 450	31836 7157
		0.114 2.9	RX	2586 375	26530 5964
		0.102 2.6	RX	2238 325	22958 5161
		0.079 2.0	RX	1600 232	16417 3691

⁵ Working Pressure and End Load are total, from all internal and external loads, roll or cut grooved in accordance with Victaulic specifications. Roll grooving shall use Victaulic roll sets.

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
- Contact Victaulic for performance on other 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.

5.2 PERFORMANCE (Continued)

Performance on ISO wall thicknesses (Austenitic Pipe Materials)

Size		Pipe Wall Thickness	Groove Type	Maximum			
Nominal inches DN	Actual Outside Diameter inches mm			Working Pressure ⁵ kPa psi	End Load ⁵ N lb		
DN125	5.500 139.7	0.394 10.0	C	5171 750	79261 17819		
		0.280 7.1	C	5171 750	79261 17819		
		0.260 6.6	Std	5171 750	79261 17819		
		0.260 6.6	C	5171 750	79261 17819		
		0.248 6.3	Std/C	4826 700	73977 16631		
		0.220 5.6	Std/C	4137 600	63409 14255		
		0.197 5.0	Std	3620 525	55487 12474		
		0.157 4.0	Std	2586 375	39631 8909		
		0.134 3.4	RX	2068 300	31652 7116		
		0.126 3.2	RX	2068 300	31704 7127		
		0.118 3.0	RX	1896 275	29062 6534		
		0.110 2.8	RX	1896 275	29062 6534		
		0.102 2.6	RX	1724 250	26420 5940		
		0.079 2.0	RX	1600 232	24525 5513		
		6 DN150	6.625 168.3	0.433 11.0	C	5171 750	115003 25854
				0.280 7.1	C	5171 750	115003 25854
0.280 7.1	Std			5171 750	115003 25854		
0.197 5.0	Std			3447 500	76668 17236		
0.177 4.5	Std			3103 450	69002 15512		
0.157 4.0	Std			2586 375	57501 12927		
0.126 3.2	RX			1896 275	42168 9480		
0.118 3.0	RX			1896 275	42168 9480		
0.102 2.6	RX			1600 232	35583 7999		
0.079 2.0	RX			1600 232	35574 7997		

⁵ Working Pressure and End Load are total, from all internal and external loads, roll or cut grooved in accordance with Victaulic specifications. Roll grooving shall use Victaulic roll sets.

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
- Contact Victaulic for performance on other 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.

Size		Pipe Wall Thickness	Groove Type	Maximum			
Nominal inches DN	Actual Outside Diameter inches mm			Working Pressure ⁵ kPa psi	End Load ⁵ N lb		
8 DN200	8.625 219.1	0.492 12.5	C	4136 600	155903 35049		
		0.315 8.0	Std/C	4136 600	155903 35049		
		0.256 6.5	Std/C	3275 475	123449 27752		
		0.248 6.3	Std/C	3275 475	123449 27752		
		0.197 5.0	Std	2586 375	97459 21910		
		0.157 4.0	Std	2068 300	77968 17528		
		0.142 3.6	RX	1896 275	71470 16067		
		0.126 3.2	RX	1600 232	60295 13555		
		0.118 3.0	RX	1551 225	58476 13146		
		0.102 2.6	RX	1207 175	45481 10225		
		0.079 2.0	RX	1034 150	38984 8764		
		10 DN250	10.750 273.0	0.559 14.2	C	4136 600	242188 54446
				0.492 12.5	C	4136 600	242188 54446
				0.394 10.0	C	4136 600	242188 54446
0.248 6.3	Std/C			2930 425	171585 38574		
0.157 4.0	RX			2065 300	121119 27229		
0.142 3.6	RX			1724 250	100933 22691		
0.126 3.2	RX			1600 232	93690 21062		
0.118 3.0	RX			1379 200	80746 18153		
0.102 2.6	RX			1034 150	60560 13614		
0.079 2.0	RX			689 100	40373 9076		
12 DN300	12.750 323.9	0.492 12.5	C	4136 600	340687 76590		
		0.394 10.0	C	4136 600	340687 76590		
		0.280 7.1	Std/C	3101 450	255568 57454		
		0.197 5.0	RX	2241 325	184577 41495		
		0.177 4.5	RX	2068 300	170379 38303		
		0.157 4.0	RX	1379 200	113590 25536		

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.

7.0 REFERENCE MATERIALS

[17.25: Victaulic Stainless Steel Rigid Coupling Style 489](#)

[24.01: Victaulic Pipe Preparation Tool Specifications](#)

[26.01: Victaulic Design Data](#)

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

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

[I-ENDCAP: Victaulic End Cap Installation Instructions](#)

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 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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