

# Victaulic® Discharge Vibration Isolation Pump Drop Series 380/380G



## 1.0 PRODUCT DESCRIPTION

### Available Sizes

- 3 – 12"/DN80 - DN300
- Offered in full or reduced port size (see Section 4.0 for details).

### Maximum Working Pressure

- Rated to the working pressure of the flange connection up to a maximum of 300 psi/2068 kPa/21 bar

### Temperature Range

- -30°F to +230°F/-34°C to +110°C

### End Preparation (specify choice)

**Series 380:** 3 – 12"/DN80 – DN300: Class 150 flange

**Series 380G:** 4 – 8"/DN100 – DN200: Original Groove System (OGS)

### Application

- This Discharge Vibration Isolation Pump Drop connects a pump to the interconnecting pipe/discharge header in the mechanical room.
- Provides noise reduction, expansion, contraction and deflection.

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

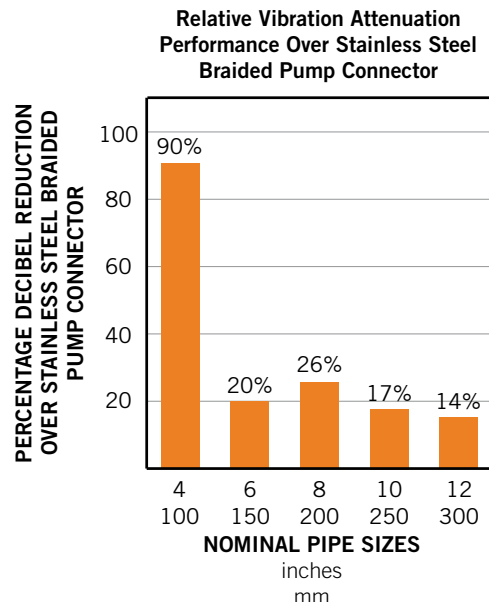
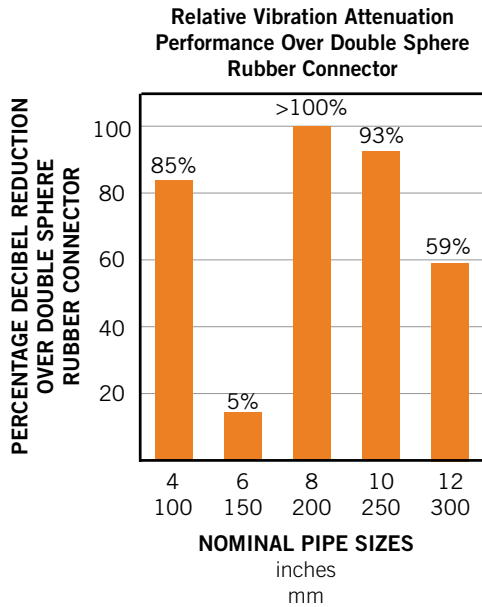
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Approved		Date	

## 1.0 PRODUCT DESCRIPTION (Continued)

### Vibration Attenuation Performance

- The following charts show the relative **vibration attenuation characteristics** of the Series 380/380G Vibration Isolation Pump Drop compared to double sphere rubber connectors and stainless steel braided pump connectors, respectively, for typical HVAC pump speeds.
- For all sizes shown, the vibration attenuation provided by the Series 380/380G exceeds the vibration attenuation characteristics of the other products tested, for typical HVAC pump speeds.



- Additionally, the Series 380/380G provides **linear movement and angular deflection capabilities**, along with the ability to **accommodate piping misalignment**, which should reduce stresses at pump or equipment connections.
- The use of either cut grooved or roll grooved pipe offers the same vibration attenuation characteristics.

**NOTE**

- For more information, please refer to [publication 26.04](#): Victaulic Couplings Vibration Attenuation Characteristics.

## 2.0 CERTIFICATION/LISTINGS

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

### 3.0 SPECIFICATIONS – MATERIAL

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- Standard weight carbon steel conforming to ASTM A53 Grade B.
- Victaulic Original Groove System (OGS).
- Standard coating: Orange enamel.
- Gaskets are EPDM.
- Bolts/Nuts: 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).

**Ductile iron butterfly valve:** Body, end face, and seal retainer conforming to ASTM A536, Grade 65-45-12 with body black alkyd enamel coating.

**Disc:** Ductile iron conforming to ASTM A536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B733.

**Seat:** EPDM.

**Stems:** 416 stainless steel conforming to ASTM A582.

**Bearings:** Fiberglass or 316 stainless steel with TFE lining.

**Stem Seals:** Furnished in same materials as seat.

**Stem Retaining Ring:** Carbon steel.

**Lever Handle:** Sizes 3 – 6"/DN80 – DN150: 10 Position (with Lever Lock) - Zinc plated carbon steel handle with zinc plated carbon steel latch plate and zinc plated carbon steel fasteners, infinitely variable, padlockable and includes memory stop. Optionally available with tamper-resistant hardware.

**Gear Operator:** Sizes 8 – 12"/DN200 – DN300 - Provided with handwheel.

#### **Ductile iron check valve conforming to ASTM A536, Grade 65-45-12.**

**Disc Coating/O-Ring:** EPDM

**Body Seat:** Size 3"/DN80: Machined surfaces electroless nickel plated. Sizes 4 – 12"/DN100 – DN300: Threaded electroless nickel plated seat.

**Discs:** Size 3"/DN80: Stainless steel disc seats against the o-ring seal, which is mounted on the electroless nickel plated end face. Sizes 4 – 12"/DN100 – DN300: Elastomer encapsulated disc and electroless nickel plated seat.

**Shaft:** Size 3"/DN80: Brass. Sizes 4 – 12"/DN100 – DN300: Type 316 stainless steel.

**Spring:** Type 302/304 stainless steel.

**Shaft Plug:** Size 3"/DN80 only: Type 416 stainless steel.

**Pipe Plug:** Sizes 4 – 12"/DN100 - DN300 only: Zinc plated carbon steel to ASTM B633.

**Flow Measuring Kit:** (Sizes 4 – 12"/DN100 – DN300 only):

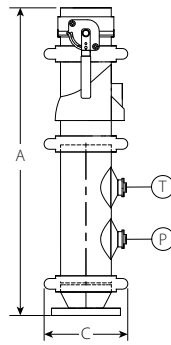
- Extension nipples
- Bronze access valves
- Quick disconnect for meter connection (Per ISO 7241-1 Series B)
- Easy-read flow chart and instructions

**Thermometer Connection:** ¾" female NPT connection.

**Pressure Gauge Connection:** ¾" NPT outlet

## 4.0 DIMENSIONS

### Series 380/380G\* Vertical Discharge Vibration Isolation Pump Drop



Vertical Pump Installation

Size		Actual Outside Diameter		Dimensions		Weight
Nominal inches DN		inches mm		A inches mm	C inches mm	Approximate (Each) lb <sup>1</sup> kg
3 DN80	x 2 DN50	3.500 88.9	2.375 60.3	28.438 722.3	6.8 172.7	41.8 18.9
			2.875 73.0	28.438 722.3	6.8 172.7	41.8 18.9
	3 DN80	3.500 88.9	3.500 88.9	25.750 654.1	6.8 172.7	39.3 17.8
			4.500 114.3	30.000 762.0	7.9 200.7	58.0 26.3
4 DN100	x 2 DN50	4.500 114.3	2.375 60.3	30.000 762.0	7.9 200.7	58.0 26.3
			2.875 73.0	30.000 762.0	7.9 200.7	61.2 27.8
	3 DN80	4.500 114.3	3.500 88.9	30.000 762.0	7.9 200.7	62.2 28.2
			4.500 114.3	26.750 679.5	7.9 200.7	57.6 26.1
5	x 2½	5.563 141.3	2.875 73.0	36.125 917.6	9.5 241.3	86.6 39.3
			3.500 88.9	36.125 917.6	9.5 241.3	88.3 40.1
	4* DN100	5.563 141.3	4.500 114.3	35.625 904.9	9.5 241.3	89.2 40.5
			5.563 141.3	31.875 609.6	9.5 241.3	81.3 36.9
	6 DN150	x 2 DN50	6.625 168.3	2.375 60.3	40.125 1019.2	10.9 276.9
2.875 73.0				40.125 1019.2	10.9 276.9	115.5 52.4
3 DN80		6.625 168.3	3.500 88.9	40.125 1019.2	10.9 276.9	116.2 52.7
			4.500 114.3	40.125 1019.2	10.9 276.9	117.3 53.2
5 DN100		6.625 168.3	5.563 141.3	40.125 1019.2	10.9 276.9	118.4 53.7
			6.625 168.3	35.875 911.2	10.9 276.9	105.9 48.0
8 DN200	x 4* DN150	8.625 219.1	4.500 114.3	49.313 1252.6	14.8 375.9	189.5 85.95
			5.563 141.3	49.313 1252.6	14.8 375.9	191.1 86.7
	6* DN150	8.625 219.1	6.625 168.3	49.313 1252.6	14.8 375.9	192.7 87.4
			8.625 219.1	44.000 1117.6	14.8 375.9	177.0 80.3

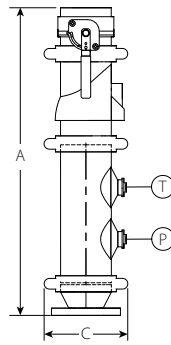
<sup>1</sup> Estimated weight using standard weight pipe.

**NOTE**

- Only the sizes marked with an asterisk "\*" are available as either a Series 380, which uses a Class 150 flange end connection, or a Series 380G, which uses an OGS grooved end connection. All other sizes listed above are only available as a Series 380.

4.0 DIMENSIONS (CONTINUED)

Series 380/380G\* Vertical Discharge Vibration Isolation Pump Drop



Vertical Pump Installation

Size				Dimensions		Weight	
Nominal inches DN		Actual Outside Diameter inches mm		A inches mm	C inches mm	Approximate (Each) lb <sup>1</sup> kg	
10 DN250	x 5	10.750 273.0	5.563 141.3	66.75 1695.5	17.1 435.3	422.1 200.5	
			6.625 168.3	59.75 1517.6	17.1 434.3	410.4 186.2	
	x 6*	10.750 273.0	8.625 219.1	59.75 1517.6	17.1 434.3	419.1 190.1	
			10.750 273.0	53.625 1362.1	17.1 434.3	376.9 171.0	
	12 DN300	x 6*	12.750 323.9	6.625 219.1	69.375 1762.1	19.3 490.2	534.2 242.3
				8.625 219.1	69.375 1762.1	19.3 490.2	542.1 245.9
x 8*		12.750 323.9	10.750 273.0	69.375 1762.1	19.3 490.2	536.7 243.3	
			12.750 323.9	62.250 1581.2	19.3 490.2	489.2 221.9	

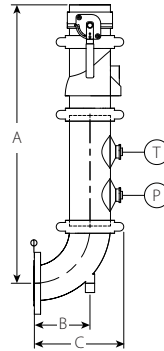
<sup>1</sup> Estimated weight using standard weight pipe.

NOTE

- Only the sizes marked with an asterisk "\*" are available as either a Series 380, which uses a Class 150 flange end connection, or a Series 380G, which uses an OGS grooved end connection. All other sizes listed above are only available as a Series 380.

## 4.1 DIMENSIONS

### Series 380/380G\* Horizontal Discharge Vibration Isolation Pump Drop



Horizontal Pump Installation

Size		Dimensions			Weight		
Nominal inches DN	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	Approximate (Each) lb <sup>1</sup> kg		
3 DN80	x 2 DN50	3.500 88.9	x 2.375 60.3	30.125 765.2	6.9375 176.2	10.3125 261.9	49.4 22.4
				30.125 765.2	6.9375 176.2	10.3125 261.9	49.4 22.4
				30.188 766.8	4.250 108.0	7.625 193.7	46.3 21.0
				30.188 766.8	4.250 108.0	7.625 193.7	46.3 21.0
4 DN100	x 2 DN50	4.500 114.3	x 2.375 60.3	31.875 609.6	8.250 209.5	12.375 314.3	70.2 31.8
				31.875 609.6	8.250 209.5	12.375 314.3	72.2 32.7
				31.875 609.6	8.250 209.5	12.375 314.3	73.2 32.2
				31.875 609.6	8.250 209.5	12.375 314.3	73.2 32.2
				31.875 609.6	8.250 209.5	12.375 314.3	73.2 32.2
5	x 2 1/2	5.563 141.3	x 2.875 73.0	37.500 952.5	9.750 247.7	14.500 368.3	103.4 46.9
				37.500 952.5	9.750 247.7	14.500 368.3	105.1 47.7
				37.500 952.5	9.250 235.0	14.000 355.6	106.0 48.1
				37.500 952.5	9.250 235.0	14.000 355.6	106.0 48.1
				37.500 952.5	9.250 235.0	14.000 355.6	106.0 48.1
6 DN150	x 2 DN50	6.625 168.3	x 2.375 60.3	42.500 1079.5	10.750 273.1	16.200 411.5	153.3 69.5
				42.500 1079.5	10.750 273.1	16.200 411.5	154.6 70.1
				42.500 1079.5	10.750 273.1	16.200 411.5	155.3 70.4
				42.500 1079.5	10.750 273.1	16.200 411.5	155.3 70.4
				42.500 1079.5	10.750 273.1	16.200 411.5	155.3 70.4
				45.125 1146.2	9.000 228.6	14.500 268.3	136.4 48.1
				45.125 1146.2	9.000 228.6	14.500 268.3	136.4 48.1
5	x 3 DN80	5.563 141.3	x 2.875 73.0	37.625 955.7	5.500 140.0	10.000 254.0	95.9 43.5
				37.625 955.7	5.500 140.0	10.000 254.0	95.9 43.5
				37.625 955.7	5.500 140.0	10.000 254.0	95.9 43.5
6	x 3 DN80	6.625 168.3	x 2.875 73.0	42.500 1079.5	10.750 273.1	16.200 411.5	153.3 69.5
				42.500 1079.5	10.750 273.1	16.200 411.5	154.6 70.1
				42.500 1079.5	10.750 273.1	16.200 411.5	155.3 70.4
6	x 4 DN100	6.625 168.3	x 2.875 73.0	45.125 1146.2	9.000 228.6	14.500 268.3	136.4 48.1
				45.125 1146.2	9.000 228.6	14.500 268.3	136.4 48.1
				45.125 1146.2	9.000 228.6	14.500 268.3	136.4 48.1
6	x 5	6.625 168.3	x 2.875 73.0	45.125 1146.2	9.000 228.7	14.500 268.4	141.4 64.1
				45.125 1146.2	9.000 228.7	14.500 268.4	141.4 64.1
				45.125 1146.2	9.000 228.7	14.500 268.4	141.4 64.1
6	x 6 DN150	6.625 168.3	x 2.875 73.0	42.625 1082.7	6.500 165.1	11.950 303.5	130.7 59.3
				42.625 1082.7	6.500 165.1	11.950 303.5	130.7 59.3
				42.625 1082.7	6.500 165.1	11.950 303.5	130.7 59.3

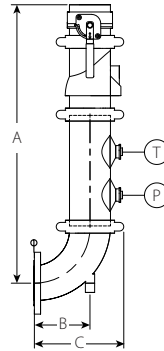
<sup>1</sup> Estimated weight using standard weight pipe.

**NOTE**

- Only the sizes marked with an asterisk "\*" are available as either a Series 380, which uses a Class 150 flange end connection, or a Series 380G, which uses an OGS grooved end connection. All other sizes listed above are only available as a Series 380.

## 4.1 DIMENSIONS (CONTINUED)

### Series 380/380G\* Horizontal Discharge Vibration Isolation Pump Drop



Horizontal Pump Installation

Size		Dimensions			Weight			
Nominal inches DN	Actual Outside Diameter inches mm	A inches mm	B inches mm	C inches mm	Approximate (Each) lb <sup>1</sup> kg			
8 DN200	x 4*	8.625 219.1	4.500 114.3	51.9375 1319.2	13.0625 331.8	19.8125 503.2	229.1 103.9	
		x 5	5.563 141.3	51.9375 1319.2	13.0625 331.8	19.8125 503.2	231.5 105.0	
			6* DN150	6.625 168.3	54.813 1392.3	10.500 266.7	17.200 436.9	222.9 101.1
				8* DN200	8.625 219.1	52.000 1320.8	7.750 196.9	14.500 368.3
			10 DN250		x 5	10.750 273.0	5.563 141.3	62.813 1595.5
6* DN150	6.625 168.3	62.813 1595.5		15.125 384.2		23.700 602.0	496.3 225.1	
	8* DN200	8.625 219.1		65.750 1670.0		12.000 304.8	20.600 523.2	467.9 212.2
10 DN250		10.750 273.0		62.750 1593.9		9.000 228.6	17.580 446.5	467.0 211.8
	12 DN300	x 6*		12.750 323.9		6.625 219.1	72.438 1840.0	17.125 435.0
8* DN200			8.625 219.1	72.438 1840.0	17.125 435.0	26.800 680.7	644.6 292.4	
			10 DN250	10.750 273.0	72.438 1840.0	17.125 435.0	26.800 680.7	644.3 292.2
12 DN300				12.750 323.9	72.375 1838.3	10.000 254.0	19.680 499.9	595.3 270.0

<sup>1</sup> Estimated weight using standard weight pipe.

**NOTE**

- Only the sizes marked with an asterisk "\*" are available as either a Series 380, which uses a Class 150 flange end connection, or a Series 380G, which uses an OGS grooved end connection. All other sizes listed above are only available as a Series 380.

## 5.0 COMPONENT PERFORMANCE

### Butterfly Valve Flow Characteristics

C<sub>v</sub>/K<sub>v</sub> values for flow of water at +60°F/+16°C with various disc positions are shown in the table below.

Formulas for C<sub>v</sub>/K<sub>v</sub> values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

**Where:**

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C<sub>v</sub> = Flow Coefficient

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

**Where:**

Q = Flow (m<sup>3</sup>/hr)

ΔP = Pressure Drop (Bar)

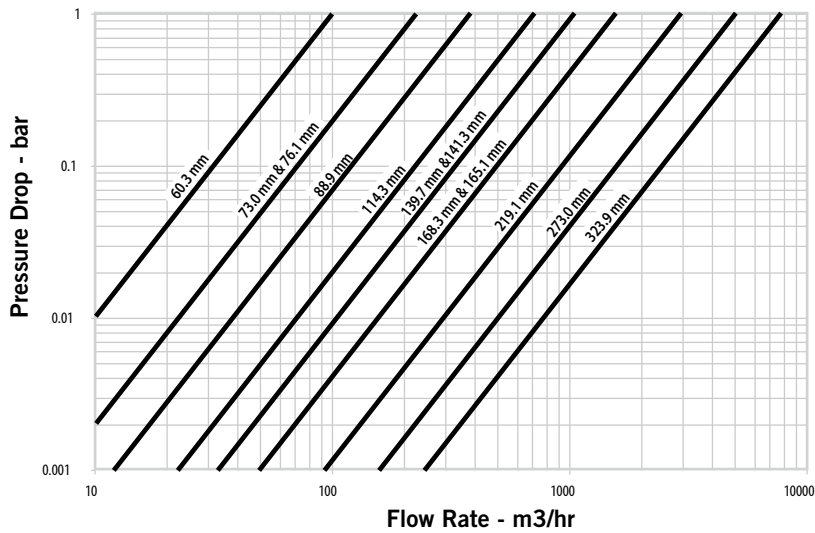
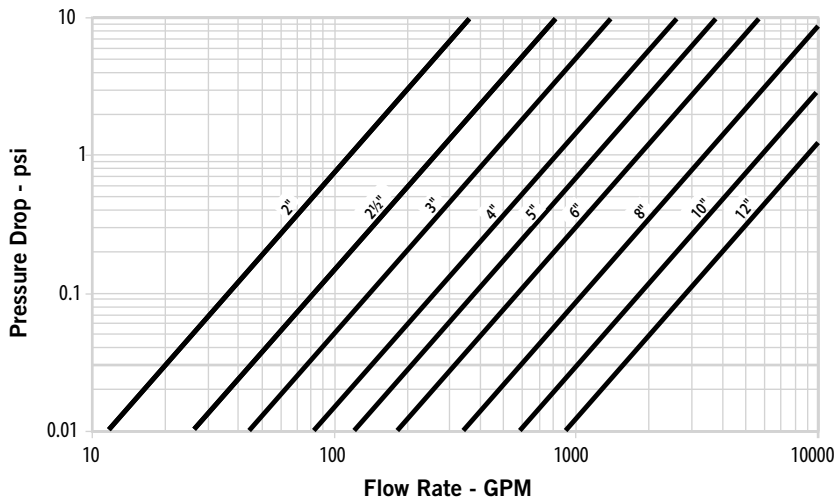
K<sub>v</sub> = Flow Coefficient







Size		(Full Open) C <sub>v</sub> K <sub>v</sub>
Nominal inches DN	Actual Outside Diameter inches mm	
3 DN80	3.500 88.9	440 379
4 DN100	4.500 114.3	820 707
5 DN125	5.563 141.3	1200 1034
6 DN150	6.625 168.3	1800 1552
8 DN200	8.625 219.1	3400 2931
10 DN250	10.750 273.0	5800 5000
12 DN300	12.750 323.9	9000 7758



## 5.0 COMPONENT PERFORMANCE (Continued)

### Butterfly Valve Flow Characteristics



Size		Flow Coefficients					
Nominal inches DN	Actual Outside Diameter inches mm	Disc Position (Degrees Open)					
		90	70	60	50	40	30
		 C <sub>v</sub> K <sub>v</sub>	 C <sub>v</sub> K <sub>v</sub>	 C <sub>v</sub> K <sub>v</sub>	 C <sub>v</sub> K <sub>v</sub>	 C <sub>v</sub> K <sub>v</sub>	 C <sub>v</sub> K <sub>v</sub>
3 DN80	3.500 88.9	440 379	230 198	140 121	90 78	50 43	26 22
4 DN100	4.500 114.3	820 707	430 371	250 216	160 138	100 86	50 43
5 DN125	5.563 141.3	1200 1034	620 534	370 319	240 207	140 121	70 60
6 DN150	6.625 168.3	1800 1552	940 8190	560 483	360 310	220 190	110 95
8 DN200	8.625 219.1	3400 2931	1770 1526	1050 905	670 578	410 353	200 172
10 DN250	10.750 273.0	5800 5000	3020 2603	1800 1552	1150 991	700 603	350 302
12 DN300	12.750 323.9	9000 7758	4680 4034	2790 2405	1780 1534	1080 931	540 465

## 5.1 COMPONENT PERFORMANCE

### Check Valve Flow Characteristics

C<sub>v</sub>/K<sub>v</sub> values for flow of water at +60°F/+16°C at full open are shown in the table below.

Formulas for C<sub>v</sub>/K<sub>v</sub> values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C<sub>v</sub> = Flow Coefficient

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

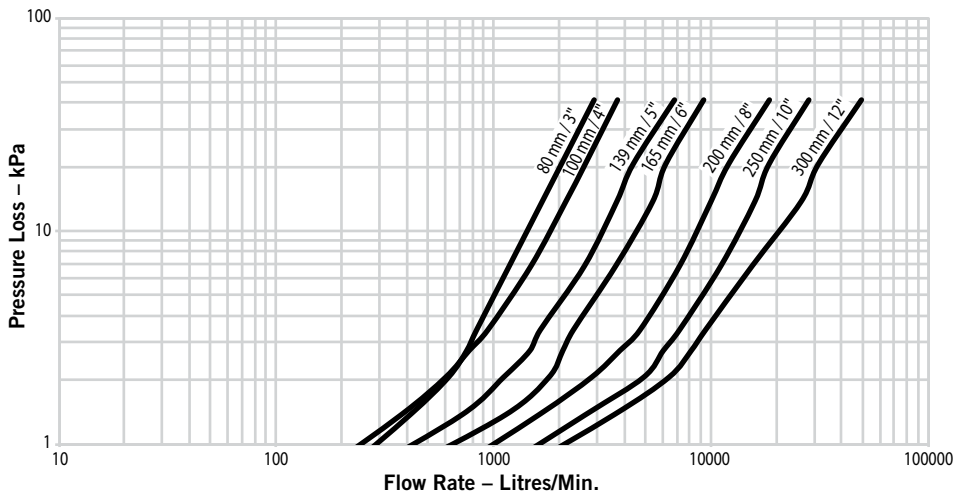
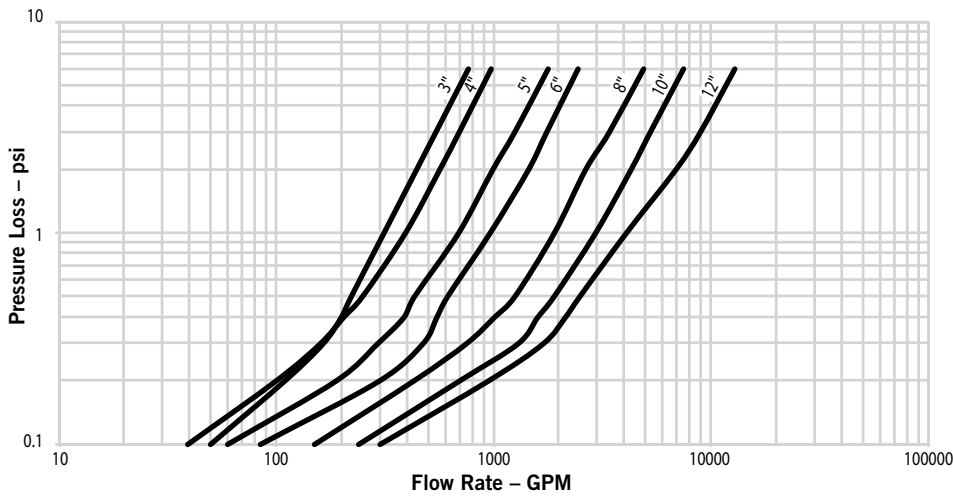
Where:

Q = Flow (m<sup>3</sup>/hr)

ΔP = Pressure Drop (Bar)







K<sub>v</sub> = Flow Coefficient

Size		(Full Open) C <sub>v</sub> K <sub>v</sub>	Size		(Full Open) C <sub>v</sub> K <sub>v</sub>
Nominal inches DN	Actual Outside Diameter inches mm		Nominal inches DN	Actual Outside Diameter inches mm	
3	3.500	315	8	8.625	1800
DN80	88.9	273	DN200	219.1	1557
4	4.500	390	10	10.750	3000
DN100	114.3	337	DN250	273.0	2595
5	5.563	700	12	12.750	4200
DN125	141.3	606	DN300	323.9	3633
6	6.625	1000			
DN150	168.3	865			



## 6.0 NOTIFICATIONS

**⚠ WARNING**



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.
- A Victaulic flexible coupling (not included) must also be installed in the piping above the Series 380/380G Discharge Isolation Pump Drop when using a vertical configuration with no reduction in pipe size.

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

## 7.0 REFERENCE MATERIALS

- [05.01: Victaulic Seal Selection](#)
- [06.15: Victaulic Pressure Ratings and End Loads for Victaulic Couplings on Steel Pipe](#)
- [26.01: Victaulic Design Data](#)
- [26.04: Victaulic Vibration Couplings Vibration Attenuation Characteristics](#)
- [29.01: Victaulic Terms and Conditions/Warranty](#)
- [I-100: Victaulic Field Installation Handbook](#)
- [I-177N: Victaulic Installation Instructions for QuickVic™ Flexible Coupling - Style 177N](#)

### 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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