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

1.0 PRODUCT DESCRIPTION

Available Sizes

- 3 – 12"/DN80 - DN300
- Offered with multiple size reductions; see section 4.0 for available options.

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

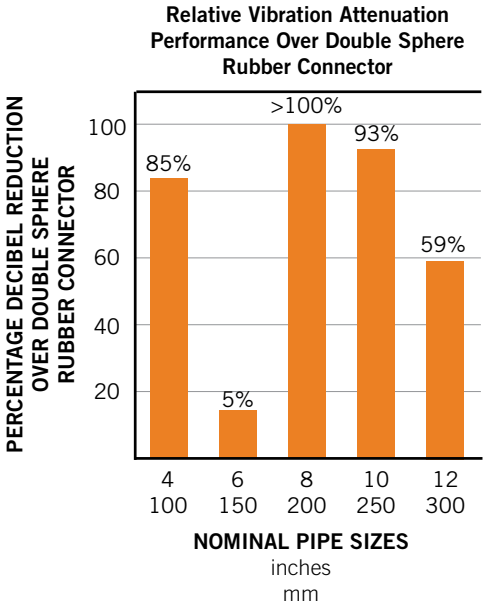
- This Discharge Vibration Isolation Pump Drop connects a pump to the interconnecting pipe/discharge header in the mechanical room.
- Provides noise reduction, expansion, contraction and deflection.

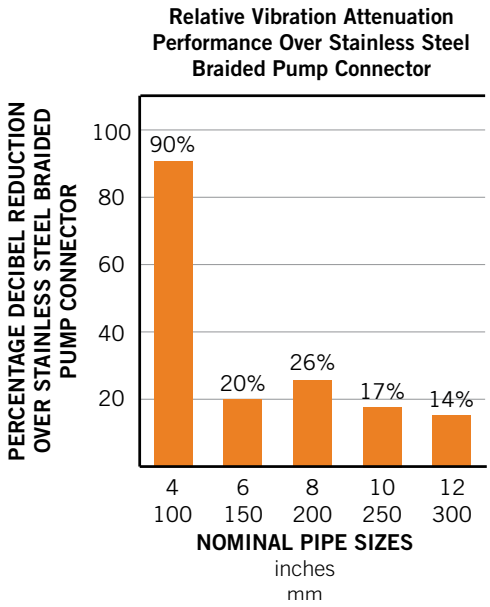
ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

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-9001:2015.

3.0 SPECIFICATIONS – MATERIAL

- Standard weight carbon steel conforming to ASTM A53 Grade B.
- Victaulic Original Groove System (OGS).
- Standard orange coating.
- Gaskets: 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 Fe/Zn5, 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 black coating.

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

Seat: EPDM.

Stem: 416 stainless steel conforming to ASTM A582.

Stem Seal Cartridge: C36000 brass.

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

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

Stem Retaining Ring: Carbon steel**.**

10-Position Handle: Sizes 3 – 6"/DN80 – DN150: 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 with black coating.

Body Seat: Size 3"/DN80: O-ring installed into an electroless nickel plating conforming to ASTM 8733.

Seat: EPDM.

Disc: Size 3"/DN80: CF8M cast stainless steel; Sizes 4 – 12"/DN100 – DN300: Ductile iron conforming to ASTM A536, Grade 65-45-12, fully encapsulated in Grade EPDM elastomer.

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: Type 416 stainless steel; Sizes 4 – 12"/DN100 – DN300: Carbon steel zinc plated to ASTM 8633.

Pipe Plug: Size 3"/DN80: Carbon steel zinc plated.

1 ¼" – 18 UNEF Female Thermometer Connection (Fits most commercially available thermometers with the well removed).

NOTE

- ¾" female NPT thermometer connection also available. Contact Victaulic for more information.

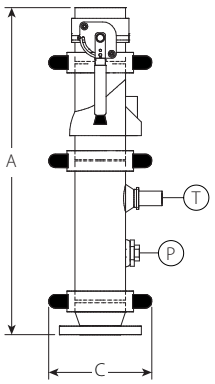
Pressure Gauge Connection: ¾" NPT outlet.

Drain Connection: ¾" NPT outlet (Horizontal discharge VIPDs only)

4.0 DIMENSIONS

Series 380 Vertical Discharge Vibration Isolation Pump Drop

Class 150 Flanged End Connection



T = Thermowell
P = Pressure Port

Vertical Pump Installation

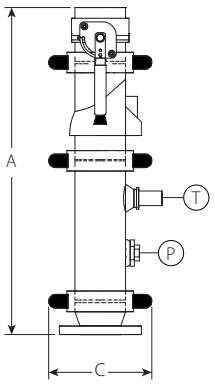
Size			Dimensions		Weight
Nominal inches DN Flange Inlet	x	Valve Outlet	A inches mm	C inches mm	Approximate (Each) lb[1] kg
3 DN80	x	2 DN50	28.438 722.3	6.8 172.7	45.7 20.7
		2½	28.438 722.3	6.8 172.7	48.4 22.0
		3 DN80	25.750 654.1	6.8 172.7	39.3 17.8
4 DN100	x	2 DN50	30.000 762.0	7.9 200.7	61.9 28.1
		2½	30.000 762.0	7.9 200.7	65.9 29.9
		3 DN80	30.000 762.0	7.9 200.7	67.9 30.8
		4 DN100	26.750 679.5	7.9 200.7	57.6 26.1
5	x	2½	36.125 917.6	9.5 241.3	91.3 41.4
		3 DN80	36.125 917.6	9.5 241.3	94.0 42.6
		4 DN100	35.625 904.9	9.5 241.3	99.5 45.1
		5	31.875 609.6	9.5 241.3	81.3 36.9
6 DN150	x	2 DN50	40.125 1019.2	10.9 276.9	118.1 53.6
		2½	40.125 1019.2	10.9 276.9	120.2 54.5
		3 DN80	40.125 1019.2	10.9 276.9	121.9 55.3
		4 DN100	40.25 1022	12.25 311	117.3 53.2
		5	40.25 1022	12.25 311	84.4 38.3
		6 DN150	35.94 913	12.25 311	105.9 48.0

[1] Estimated weight using standard weight pipe.

4.0 DIMENSIONS (CONTINUED)

Series 380 Vertical Discharge Vibration Isolation Pump Drop

Class 150 Flanged End Connection



T = Thermowell
P = Pressure Port

Vertical Pump Installation

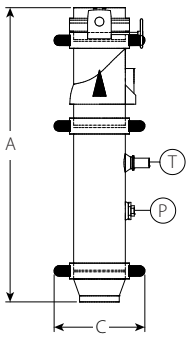
Size			Dimensions		Weight
Nominal inches DN Flange Inlet	x	Valve Outlet	A inches mm	C inches mm	Approximate (Each) lb[1] kg
8 DN200	x	4 DN100	49.19 1249	15.13 384	189.5 86.0
		5	49.19 1249	15.13 384	191.1 86.7
		6 DN150	49.19 1249	15.13 384	192.7 87.4
		8 DN200	43.88 1114	15.13 384	177.0 80.3
10 DN250	x	5	66.63 1692	17.13 435	422.1 191.5
		6 DN150	59.63 1515	17.13 435	410.4 186.2
		8 DN200	59.63 1515	17.13 435	419.1 190.1
		10 DN250	53.50 1359	17.13 435	376.9 171.0
12 DN300	x	6 DN150	69.19 1757	19.25 489	534.2 242.3
		8 DN200	69.19 1757	19.25 489	542.1 245.9
		10 DN250	69.19 1757	19.25 489	536.7 243.4
		12 DN300	62.13 1578	19.25 489	489.2 221.9

[1] Estimated weight using standard weight pipe.

4.1 DIMENSIONS

Series 380G Vertical Discharge Vibration Isolation Pump Drop

OGS Grooved End Connection



T = Thermowell
P = Pressure Port

Vertical Pump Installation

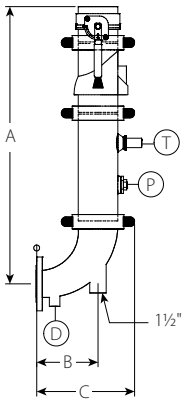
Size						Dimensions		Weight
Nominal inches DN Groove Inlet	x	Valve Outlet	Actual Outside Diameter inches DN Groove Inlet	x	Valve Outlet	A inches mm	C inches mm	Approximate (Each) lb[1] kg
4 DN100	x	4 DN100	4.500 114.3	x	4.500 114.3	26.81 681	9.50 241	57.6 26.1
5	x	4 DN100	5.563 141.3	x	4.500 114.3	35.75 908	11.31 287	99.5 45.1
6 DN150	x	4 DN100	6.625 168.3	x	4.500 114.3	40.25 1022	12.25 311	117.3 53.2
		6 DN150			6.625 168.3	35.94 913	12.25 311	105.9 48.0
8 DN200	x	4 DN100	8.625 219.1	x	4.500 114.3	49.19 1249	15.13 384	189.5 86.0
		6 DN150			6.625 168.3	49.19 1249	15.13 384	192.7 87.4
		8 DN200			8.625 219.1	43.88 1114	15.13 384	177.0 80.3
10 DN250	x	6 DN150	10.750 273.0	x	6.625 168.3	59.63 1514	17.13 435	410.4 186.2
		8 DN200			8.625 219.1	59.63 1514	17.13 435	419.1 190.1
12 DN300	x	6 DN150	12.750 323.9	x	6.625 168.3	69.19 1757	19.25 489	534.2 242.3
		8 DN200			8.625 219.1	69.19 1757	19.25 489	542.1 254.9

[1] Estimated weight using standard weight pipe.

4.2 DIMENSIONS

Series 380 Horizontal Discharge Vibration Isolation Pump Drop

Class 150 Flanged End Connection



T = Thermowell
P = Pressure Port
D = Drain Tap

Horizontal Pump Installation

Size			Dimensions			Weight
Nominal inches DN Flange Inlet	x	Valve Outlet	A inches mm	B inches mm	C inches mm	Approximate (Each) lb[1] kg
3 DN80	x	2 DN50	31.75 806	5.75 146	9.50 241	54.5 24.7
		2½	31.75 806	5.75 146	9.50 241	57.1 25.9
		3 DN80	31.69 805	5.75 164	9.56 243	54.8 24.9
4 DN100	x	2 DN50	34.38 873	7.25 184	12.00 305	77.1 35.0
		2½	34.38 873	7.25 184	12.00 305	79.8 36.2
		3 DN80	34.38 873	7.25 184	12.00 305	77.8 35.3
		4 DN100	34.38 873	7.25 184	12.00 305	79.3 36.0
5	x	2½	43.13 1096	7.25 184	12.94 329	101.5 46.0
		3 DN80	43.13 1095	7.25 184	12.94 329	118.8 53.9
		4 DN100	41.00 1041	8.75 222	14.44 367	98.9 44.9
		5[2]	41.50 1054	9.25 235	14.94 379	95.9 43.5
6 DN150	x	2 DN50	47.63 1210	7.25 184	13.38 340	165.7 75.2
		2½	47.63 1210	7.25 184	13.38 340	167.7 76.1
		3 DN80	46.50 1181	10.25 260	16.38 416	136.6 62.0
		4 DN100	46.50 1181	10.25 260	16.38 416	127.6 57.9
		5	46.50 1181	10.25 260	16.38 416	133.9 60.70
		6 DN150	46.50 1181	10.25 260	16.38 416	147.1 66.7

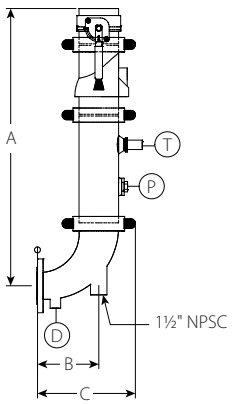
[1] Estimated weight using standard weight pipe.

[2] This size of the Series 380 horizontal discharge VIPD uses a standard long radius elbow, which does not include a base support and a drain.

4.2 DIMENSIONS (CONTINUED)

Series 380 Horizontal Discharge Vibration Isolation Pump Drop

Class 150 Flanged End Connection



T = Thermowell
P = Pressure Port
D = Drain Tap

Horizontal Pump Installation

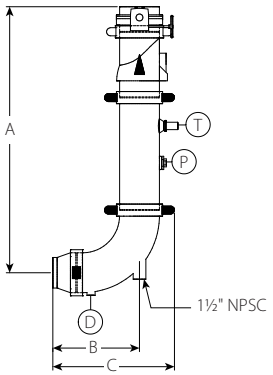
Size			Dimensions			Weight
Nominal inches DN Flange Inlet	x	Valve Outlet	A inches mm	B inches mm	C inches mm	Approximate (Each) lb[1] kg
8 DN200	x	4 DN100	57.69 1465	13.50 343	21.06 535	213.3 96.8
		5	57.69 1465	13.50 343	21.06 535	216.4 98.2
		6 DN150	57.69 1465	13.50 343	21.06 535	210.7 95.6
		8 DN200	57.69 1465	13.50 343	21.06 535	239.8 108.8
10 DN250	x	5	73.50 1867	13.50 343	22.06 560	535.5 108.8
		6 DN150	70.13 1781	16.50 419	25.06 637	527.9 239.5
		8 DN200	70.13 1781	16.50 419	25.06 637	451.5 239.5
		10 DN250	70.13 1781	16.50 419	25.06 637	506.7 229.8
12 DN300	x	6 DN150	85.88 2181	16.50 419	26.13 664	710.5 322.3
		8 DN200	81.69 2075	19.50 495	29.13 740	623.4 282.8
		10 DN250	81.69 2075	19.50 495	29.13 740	649.8 294.7
		12 DN300	81.69 2075	19.50 495	29.13 740	671.6 304.6

[1] Estimated weight using standard weight pipe.

4.3 DIMENSIONS

Series 380G Horizontal Discharge Vibration Isolation Pump Drop

OGS Grooved End Connection



T = Thermowell
P = Pressure Port
D = Drain Tap

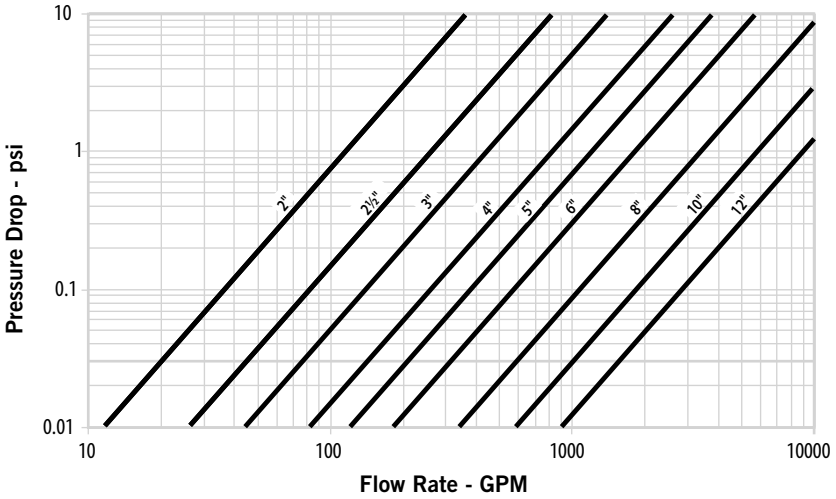
Horizontal Pump Installation

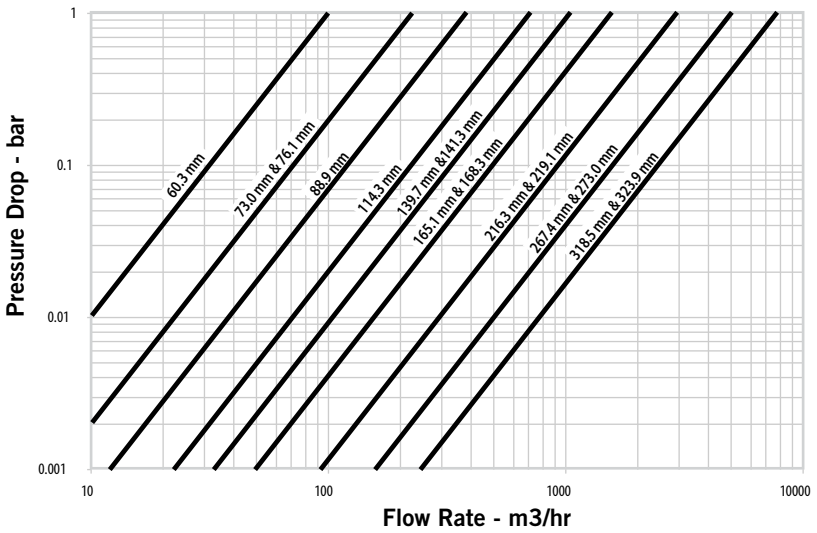
Size						Dimensions			Weight
Nominal inches DN Groove Inlet	x	Valve Outlet	Actual Outside Diameter inches DN Groove Inlet	x	Valve Outlet	A inches mm	B inches mm	C inches mm	Approximate (Each) lb[1] kg
4 DN100	x	4 DN100	4.500 114.3	x	4.500 114.3	34.38 873	7.25 184	12.00 305	72.9 33.1
5	x	4 DN100	5.563 141.3	x	4.500 114.3	43.13 1095	7.25 184	12.94 329	100.0 45.4
6 DN150	x	4 DN100	6.625 168.3	x	4.500 114.3	46.31 1176	14.50 368	20.63 524	159.6 72.4
		6 DN150			6.625 168.3	46.50 1181	10.25 260	16.38 416	141.9 64.4
8 DN200	x	4 DN100	8.625 219.1	x	4.500 114.3	57.56 1462	18.75 476	26.38 670	248.7 112.8
		6 DN150			6.625 168.3	57.56 1462	18.75 476	26.38 670	275.1 124.8
		8 DN200			8.625 219.1	57.69 1465	13.50 343	21.06 535	232.4 105.4
10 DN250	x	6 DN150	10.750 273.0	x	6.625 168.3	70.25 1784	22.56 573	31.13 791	523.8 237.6
		8 DN200			8.625 219.1	70.25 1784	22.56 573	31.13 791	545.2 247.3
12 DN300	x	6 DN150	12.750 323.9	x	6.625 168.3	81.81 2078	26.56 675	36.19 919	700.6 317.8
		8 DN200			8.625 219.1	81.81 2078	26.56 675	36.19 919	718.7 326.0

[1] Estimated weight using standard weight pipe.

5.0 COMPONENT PERFORMANCE

Butterfly Valve Flow Characteristics





Size		Flow Coefficients					
		Disc Position (Degrees Open)					
		90	70	60	50	40	30
Nominal inches DN	Actual Outside Diameter inches mm	 Cv Kv	 Cv Kv	 Cv Kv	 Cv Kv	 Cv Kv	 Cv Kv
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_v/K_v values for flow of water at +60°F/+16°C at full open are shown below.

Formulas for C_v/K_v values:

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

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

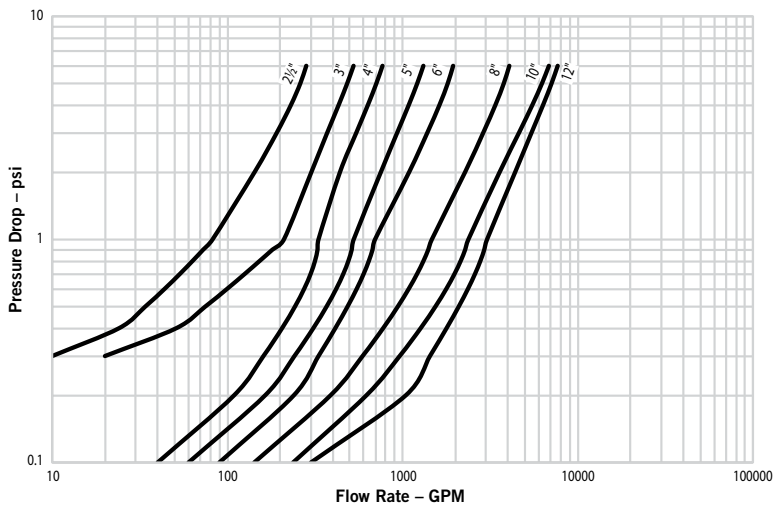
Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

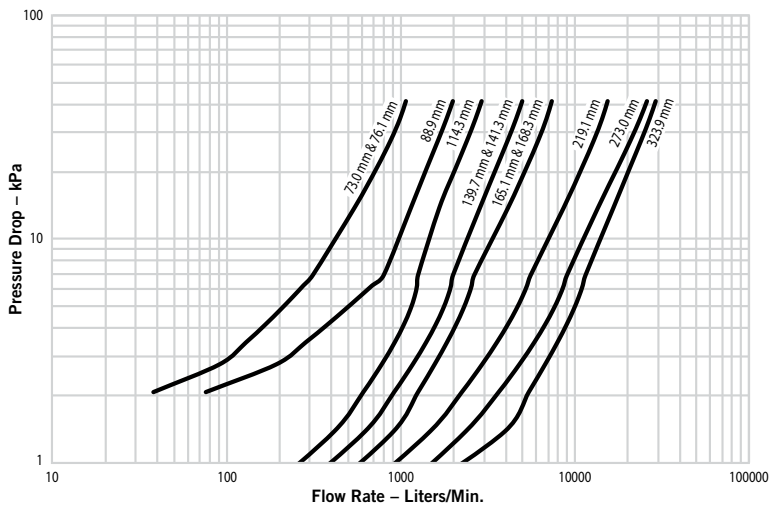
$$\Delta P = \frac{Q^2}{K_v^2}$$

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

Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

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

07.13: Victaulic Base Support Elbows Nos. 100F, R100F, 100G and R100G

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

