Victaulic® Discharge Vibration Isolation Pump Drop Series 336 – Korea Only

Vertical

Horizontal

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 PN10/PN16 or the JIS 10K flange connection.

Temperature Range

- –30°F to +230°F/–34°C to +110°C

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.

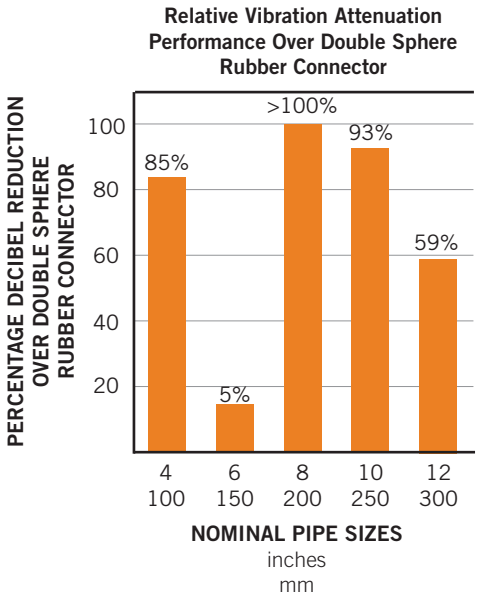
System No.		Location	
Submitted By		Date	

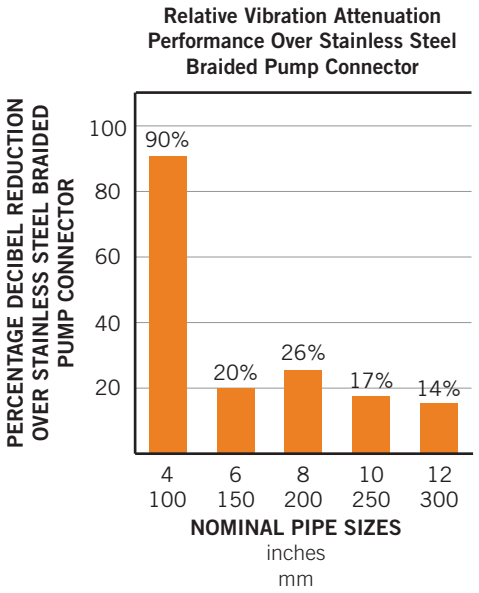
Spec Section		Paragraph	
Approved		Date	

1.0 PRODUCT DESCRIPTION (Continued)

Vibration Attenuation Performance

- The following charts show the relative **vibration attenuation characteristics** of the Series 336 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 336 exceeds the vibration attenuation characteristics of the other products tested, for typical HVAC pump speeds.





- Additionally, the Series 336 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

- Carbon steel conforming to KS D3507 Grade SPP.
- Victaulic Original Groove System (OGS).
- Standard coupling coating: Orange enamel.
- Pipe spool coating: (specify choice)
  - ☐ Standard: Orange enamel.
  - ☐ Optional: Hot dipped galvanized.
- 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.

Stem Seal Cartridge: C36000 brass.

Bearings: Fiberglass or 316 stainless steel with TFE lining.

Stem Seal: Furnished in same materials as seat.

Stem Retaining Ring: Carbon steel.

Gear Operator: Provided with handwheel.

Ductile iron check valve conforming to ASTM A536, Grade 65-45-12, painted black enamel.

Body Seat: Size 3"/DN80: O-ring installed into an electroless nickel plating conforming to ASTM B733.

Seat: EPDM.

Disc: Size 3"/DN80: CF8M cast stainless steel; Sizes 4 – 12"/DN10 – 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.

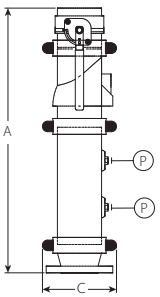
Shaft Plug: 3"/DN80: Type 416 stainless steel; Sizes 4 – 12"/DN100-DN300: Carbon steel zinc plated to ASTM B633.

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

Pressure Gauge Connection: ½"/15 mm BSPT.

4.0 DIMENSIONS

Series 336 Vertical Discharge Vibration Isolation Pump Drop



P = Pressure Port

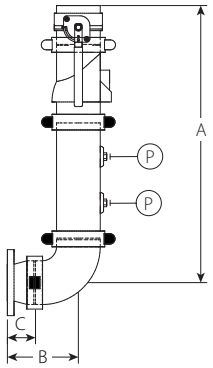
Vertical Pump Installation

Size			Dimensions		Weight
Actual Outside Diameter mm inches			A mm inches	C mm inches	Approximate (Each) kg[1] lb
88.9 3.500	x	76.1 3.000	718 28.27	173 6.81	21.6 47.6
		88.9 3.500	651 25.63	173 6.81	19.0 41.9
114.3 4.500	x	76.1 3.000	752 29.61	201 7.91	32.8 72.3
		88.9 3.500	752 29.61	201 7.91	33.3 73.4
		114.3 4.500	673 26.50	201 7.91	42.7 94.1
139.7 5.500	x	88.9 3.500	908 35.75	243 9.57	44.3 97.7
		114.3 4.500	895 35.24	243 9.57	43.5 95.9
		139.7 5.500	803 31.61	243 9.57	36.7 80.9
165.1 6.500	x	114.3 4.500	1009 39.72	282 11.10	60.4 133.2
		139.7 5.500	1009 39.72	282 11.10	56.7 125.0
		165.1 6.500	904 35.59	282 11.10	50.7 111.8
216.3	x	139.7 5.500	1235 48.62	356 14.02	100.8 222.2
		165.1 6.500	1235 48.62	356 14.02	97.0 213.8
		216.3 –	1263 49.72	356 14.02	89.6 197.5
267.4	x	165.1 6.500	1517 59.72	422 16.61	181.6 400.4
		219.1 8.625	1517 59.72	422 16.61	228.9 504.6
		267.4 –	1568 61.73	422 16.61	170.9 376.8
318.5	x	219.1 8.625	1762 69.37	475 18.70	241.8 533.1
		273.0 10.750	1762 69.37	475 18.70	240.8 530.9
		318.5 –	1787 70.35	475 18.70	170.9 376.8

[1] Estimated weight using carbon steel pipe conforming to KS D3507 Grade SPP.

4.1 DIMENSIONS

Series 336 Horizontal Discharge Vibration Isolation Pump Drop



P = Pressure Port

Horizontal Pump Installation

Size			Dimensions			Weight
Actual Outside Diameter mm inches			A mm inches	B mm inches	C mm inches	Approximate (Each) kg[1] lb
88.9 3.500	x	76.1 3.000	761 29.96	354 13.94	241 9.49	26.9 59.3
		88.9 3.500	762 30.00	214 8.43	102 4.02	25.0 55.1
114.3 4.500	x	76.1 3.000	801 31.54	387 15.24	254 10.00	36.2 79.8
		88.9 3.500	803 31.61	387 15.24	254 10.00	40.2 88.6
		114.3 4.500	804 31.65	286 11.26	152 5.98	52.5 115.7
139.7 5.500	x	88.9 3.500	946 37.24	425 16.73	279 10.98	53.6 118.2
		114.3 4.500	946 37.24	425 16.73	279 10.98	50.3 110.9
		139.7 5.500	946 37.24	298 11.73	152 5.98	51.3 113.1
165.1 6.500	x	114.3 4.500	1067 42.01	464 18.27	292 11.50	72.2 159.2
		139.7 5.500	1070 42.13	464 18.27	292 11.50	69.5 153.2
		165.1 6.500	1076 42.36	324 12.76	152 5.98	70.3 155.0
216.3	x	139.7 5.500	1305 51.38	508 20.00	305 12.01	121.1 267.0
		165.1 6.500	1304 51.34	508 20.00	305 12.01	128.3 282.9
		216.3	1307 51.46	356 14.02	152 5.98	103.3 227.7
267.4	x	165.1 6.500	1595 62.80	562 22.13	330 13.00	219.5 438.9
		219.1 8.625	1595 62.80	562 22.13	330 13.00	267.1 588.9
		267.4	1595 62.80	435 17.13	203 7.99	199.6 440.0
318.5	x	219.1 8.625	1840 72.44	613 24.13	356 14.02	274.4 605.0
		273.0 10.750	1840 72.44	613 24.13	356 14.02	280.8 619.1
		318.5	1840 72.44	460 18.11	203 7.99	204.5 450.8

[1] Estimated weight using carbon steel pipe conforming to KS D3507 Grade SPP.

5.0 COMPONENT PERFORMANCE

Butterfly Valve Flow Characteristics

C_v/K_v values for flow of water at +60°F/+16°C with various disc positions are shown in the table 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

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

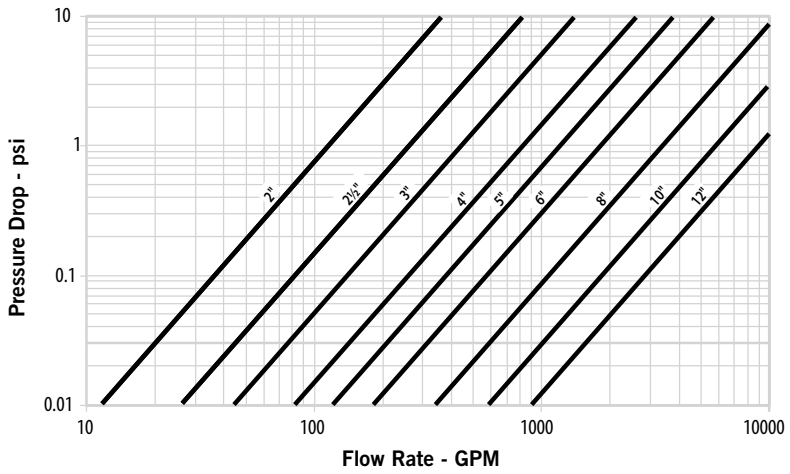
$$Q = K_v \times \sqrt{\Delta P}$$

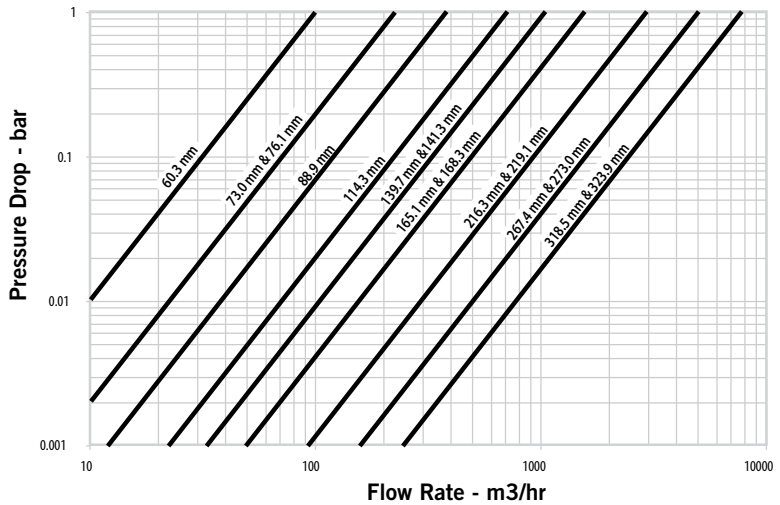
Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

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

Formulas for C_v/K_v values:

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

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

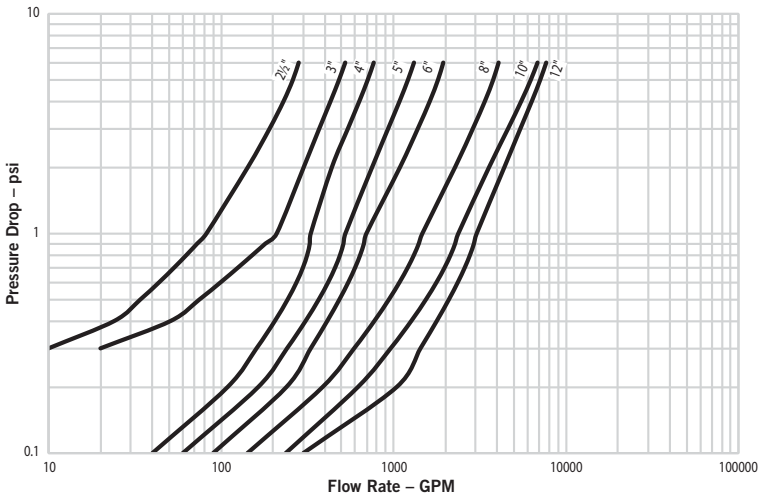
Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

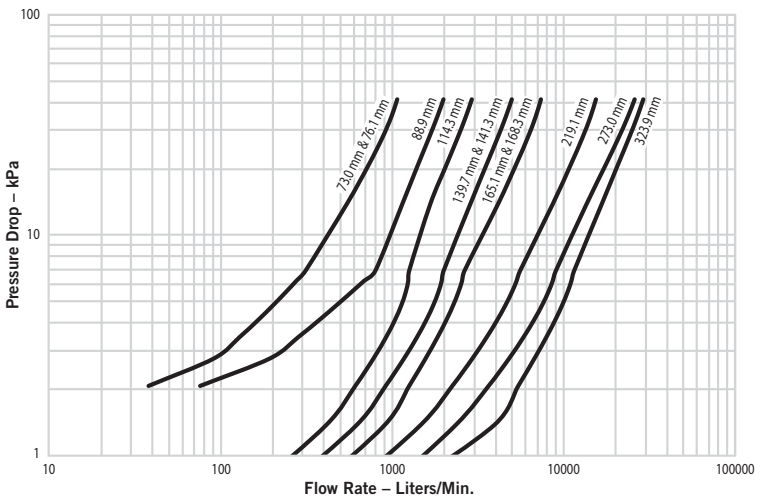
$$\Delta P = \frac{Q^2}{K_v^2}$$

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

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	Cv Kv	**Nominal** inches DN	**Actual Outside Diameter** inches mm	Cv Kv
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 336 Discharge Vibration 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 Guide

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: Installation Instructions for QuickVic™ Flexible Coupling - Style 177N

