

# 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.

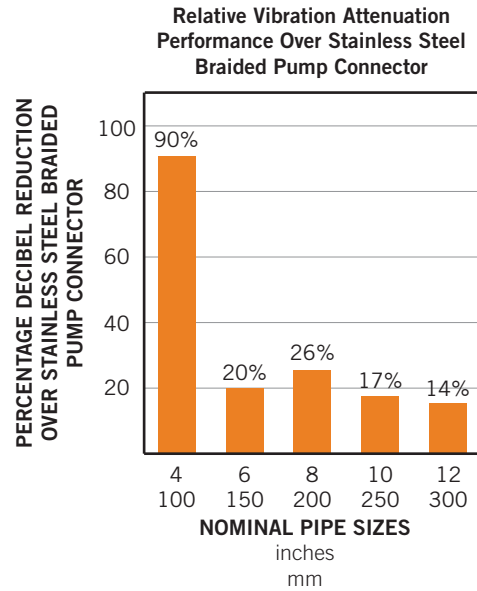
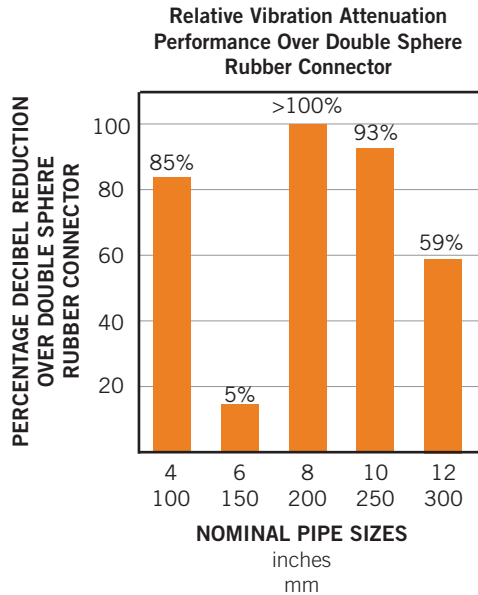
System No.		Location	
Submitted By		Date	

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

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- 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.

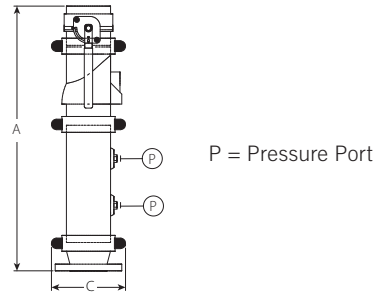
**Shaft Plug:** 3"/DN80: Type 416 stainless steel; Sizes 4 – 12"/DN100-DN300: Carbon steel zinc plated to ASTM B633.

**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



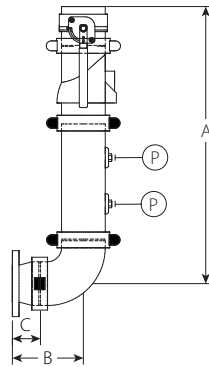
Vertical Pump Installation

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

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

<sup>1</sup> Estimated weight using carbon steel pipe conforming to KS D3507 Grade SPP.

## 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)

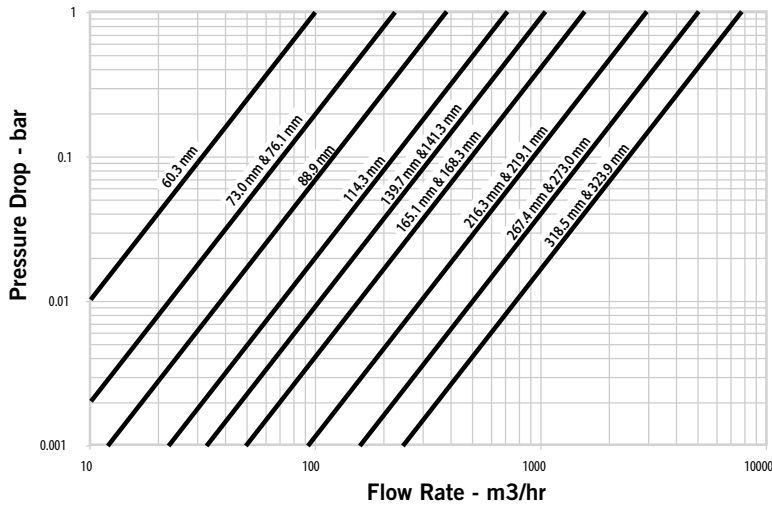
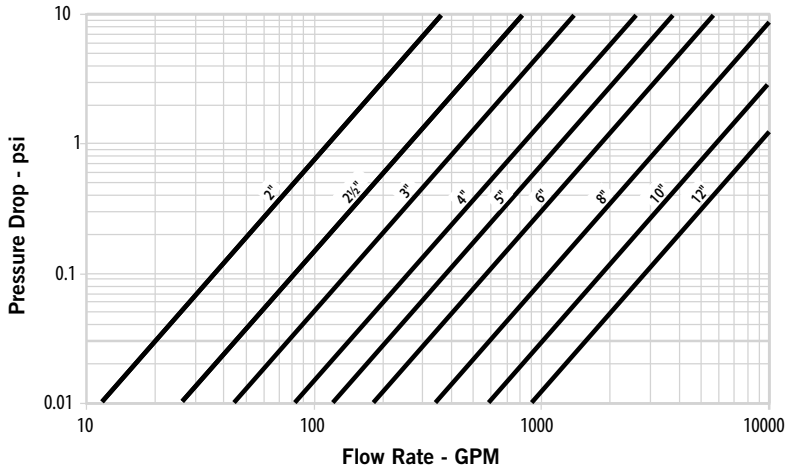
ΔP = Pressure Drop (Bar)







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

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

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

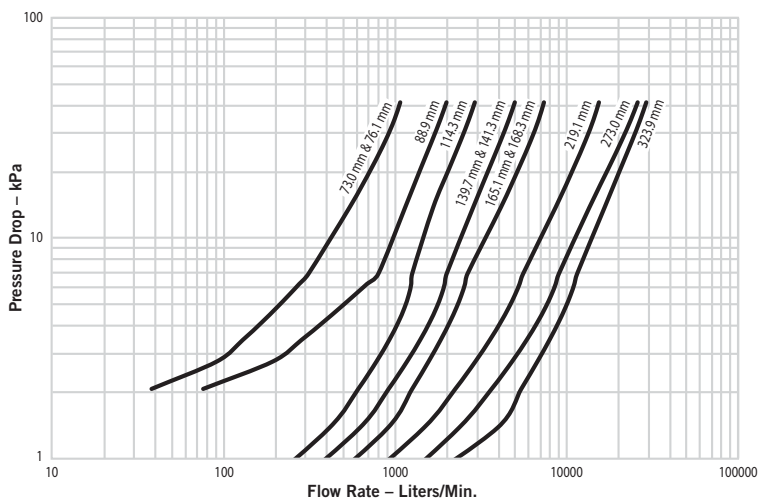
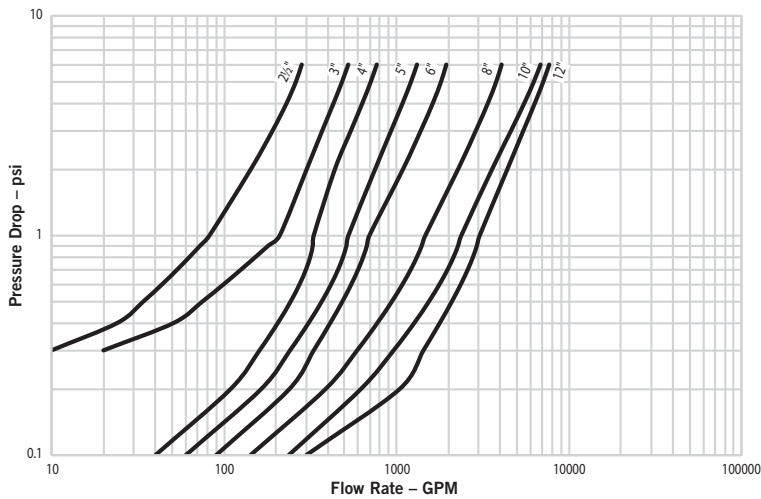
**Where:**

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

ΔP = Pressure Drop (Bar)

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

Size			Size		
Nominal inches DN	Actual Outside Diameter inches mm	(Full Open) C <sub>v</sub> K <sub>v</sub>	Nominal inches DN	Actual Outside Diameter inches mm	(Full Open) C <sub>v</sub> K <sub>v</sub>
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](#)

### 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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