Victaulic® Suction Vibration Isolation Pump Drop Series 328 – China Only

102.28

1.0 PRODUCT DESCRIPTION

Available Sizes

- 4 – 12"/DN100 – DN300

Maximum Working Pressure

- Rated to the working pressure of the PN10/PN16 flange connection.

Temperature Range

- –30°F to +230°F/–34°C to +110°C

Application

- This Suction Vibration Isolation Pump Drop connects the water flow intake to the pump 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	

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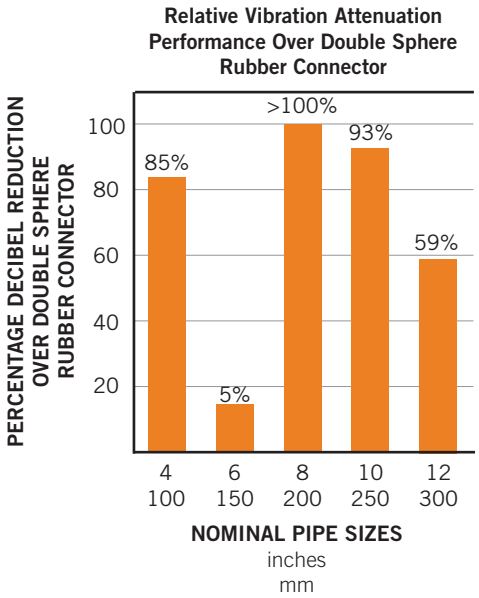
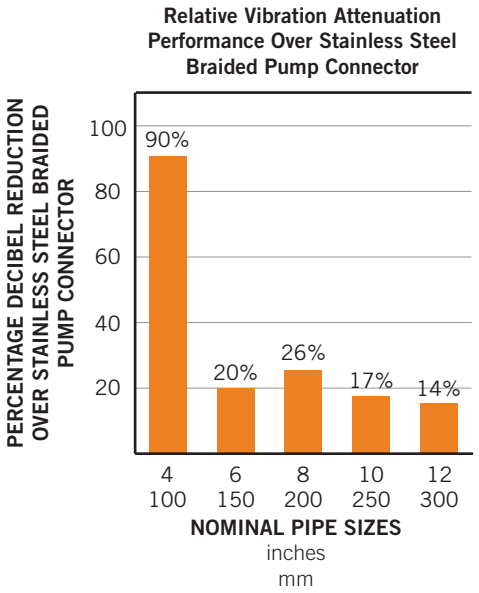
1.0 PRODUCT DESCRIPTION (CONTINUED)

Vibration Attenuation Performance

- The following charts show the relative **vibration attenuation characteristics** of the Series 328 Suction 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 328 exceeds the vibration attenuation characteristics of the other products tested, for typical HVAC pump speeds.





- Additionally, the Series 328 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.

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3.0 SPECIFICATIONS – MATERIAL

- Standard weight carbon steel conforming to ASTM A53 Grade B or equal.
- Victaulic Original Groove System (OGS).
- Standard coupling coating: Orange enamel.
- Standard pipe spool 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.

Stem: 416 stainless steel conforming to ASTM A582.

Stem Seal Cartridge: C36000 brass.

Bearings: Fiberglass and 316 stainless steel with TFE lining.

Stem Seals: Furnished in same materials as seat.

Stem Retaining Ring: Carbon steel.

10-Position Handle: Sizes 4 – 6"/DN100 – 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 suction diffuser: Body, coupling and end cap conforming to ASTM A395, with orange enamel coating.

Diffuser: Type 304 stainless steel, frame and perforated sheet with 5⁄32"/4 mm diameter holes.

Start-Up Pre-Filter: 20 mesh stainless steel, Type 304.

Bolts/Nuts: Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A449 and physical requirements of ASTM A183

Outlet Connection: ½"/15 mm BSPT

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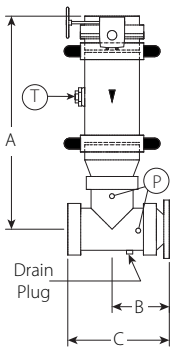
4.0 DIMENSIONS

Series 328 Suction Vibration Isolation Pump Drop



T = Thermowell
P = Pressure Port

Size			Dimensions			Weight
Actual Outside Diameter mm inches			A mm inches	B mm inches	C mm inches	Approximate (Each) kg[1] lb
114.3 4.500	x	88.9 3.500	657 25.87	188 7.40	330 13.00	31.2 68.8
		114.3 4.500	657 25.87	188 7.40	330 13.00	32.5 71.7
165.1 6.500	x	88.9 3.500	826 32.52	213 8.39	381 15.00	73.0 160.9
		114.3 4.500	727 28.62	229 9.02	406 15.98	81.9 180.6
		165.1 6.500	727 28.62	229 9.02	401 15.79	81.9 180.6
168.3 6.625	x	88.9 3.500	826 32.52	213 8.39	381 15.00	73.0 160.9
		114.3 4.500	727 28.62	229 9.02	406 15.98	58.1 128.1
		168.3 6.625	727 28.62	229 9.02	401 15.79	61.0 134.5
219.1 8.625	x	114.3 4.500	853 33.58	229 9.02	406 15.98	113.2 249.6
		165.1 6.500	744 29.29	259 10.20	483 19.02	96.1 211.9
		219.1 8.625	744 29.29	259 10.20	483 19.02	100.0 220.5
273.0 10.750	x	165.1 6.500	858 33.78	315 12.40	584 22.99	159.0 350.5
		219.1 8.625	858 33.78	315 12.40	572 22.52	163.2 359.8
		273.0 10.750	858 33.78	315 12.40	572 22.52	168.7 371.9
323.9 12.750	x	219.1 8.625	915 36.02	392 15.43	686 27.01	211.4 466.1
		273.0 10.750	915 36.02	392 15.43	682 26.85	218.1 480.8
		323.9 12.750	915 36.02	392 15.43	682 26.85	224.0 493.8

[1] Estimated weight using standard weight pipe.

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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		
Nominal inches DN	**Actual Outside Diameter** inches mm	C_v K_v
4 DN100	4.500 114.30	820 707
5 DN125	5.563 141.30	1200 1034
6 DN150	6.625 168.30	1800 1552
8 DN200	8.625 219.10	3400 2931
10 DN250	10.750 273.00	5800 5000
12 DN300	12.750 323.90	9000 7758

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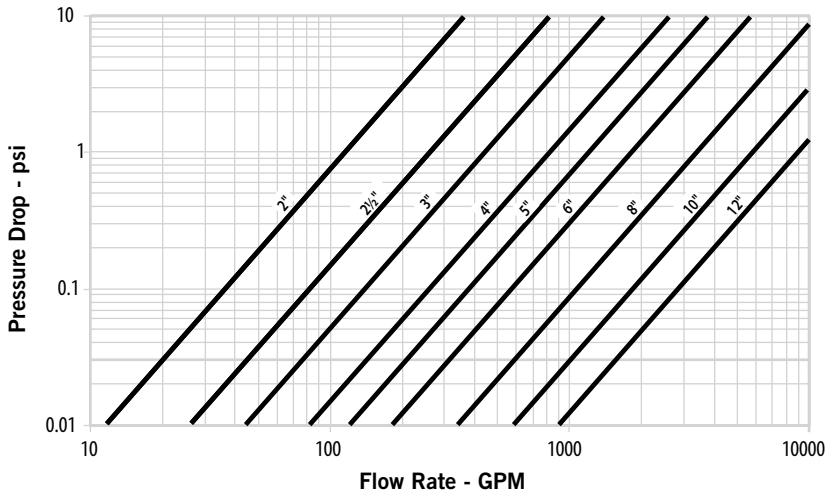
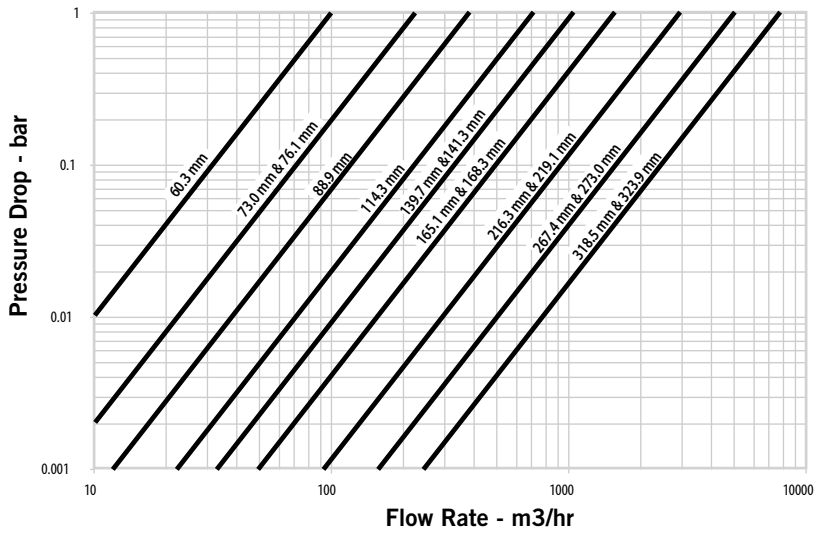
5.0 COMPONENT PERFORMANCE (CONTINUED)

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
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

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5.1 COMPONENT PERFORMANCE

Suction Diffuser Flow Characteristics

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						Flow Data	C_v / K_v
Nominal inches DN			Actual Outside Diameter inches mm				
4 DN100	x	2½	4.500 114.3	x	2.875 73.0	D	144 125
		3 DN80			3.500 88.9	D	144 125
		4 DN100			4.500 114.3	E	161 139
5	x	2½	5.563 141.3	x	2.875 73.0	F	206 178
		3 DN80			3.500 88.9	F	206 178
		4 DN100			4.500 114.3	G	232 200
		5			5.563 141.3	H	251 217
6 DN150	x	3 DN80	6.625 168.3	x	3.500 88.9	I	295 255
		4 DN100			4.500 114.3	I	295 255
		5			5.563 141.3	J	361 312
		6 DN150			6.625 168.3	J	361 312
8 DN200	x	4 DN100	8.625 219.1	x	4.500 114.3	L	509 440
		5			5.563 141.3	L	509 440
		6 DN150			6.625 168.3	M	575 497
		8 DN200			8.625 219.1	N	642 555
10 DN250	x	6 DN150	10.750 273.0	x	6.625 168.3	O	821 710
		8 DN200			8.625 219.1	P	917 793
		10 DN250			10.750 273.0	Q	1003 867
12 DN300	x	8 DN200	12.750 323.9	x	8.625 219.1	R	1352 1170
		10 DN250			10.750 273.0	R	352 1170
		12 DN0300			12.750 323.9	S	1445 1249

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5.1 COMPONENT PERFORMANCE (CONTINUED)

Suction Diffuser Flow Characteristics

Formulas for C_v/K_v values:

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

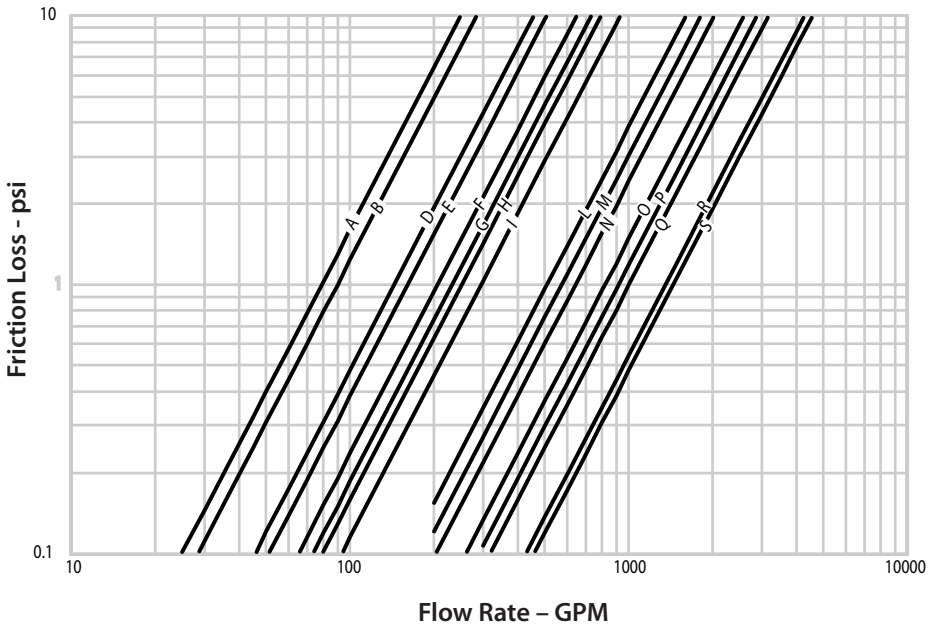
$$Q = C_v \times \sqrt{\Delta P}$$

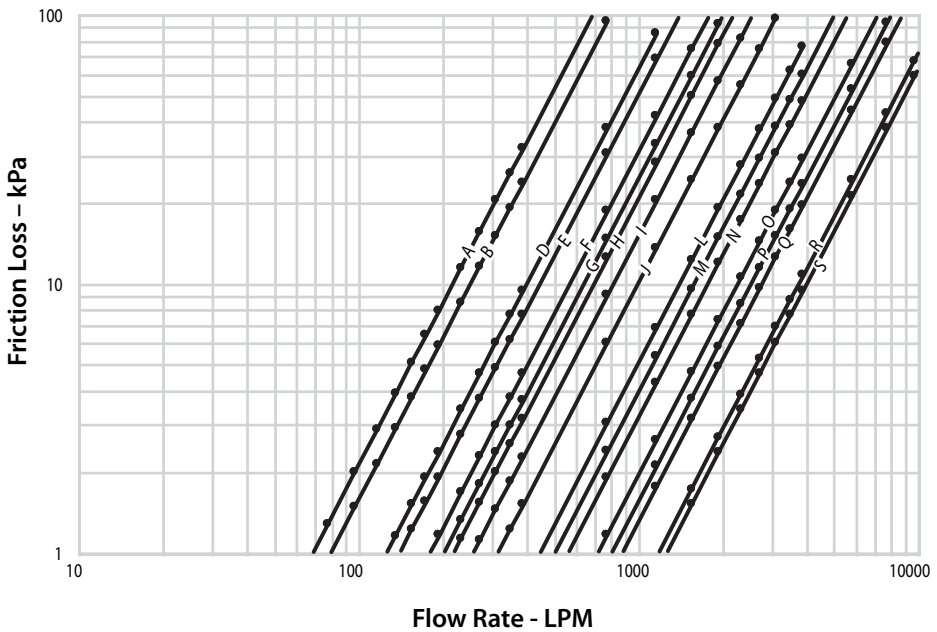
Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

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

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

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





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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 328 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

I-731D IW731D: Installation & Servicing Instructions for Suction Diffuser - Series 731-D

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.

Warranty
Refer to the Warranty section of the current Price List or contact Victaulic for details.

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