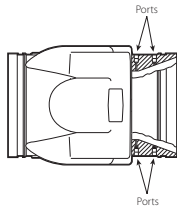


# Victaulic® Venturi Check Valve and Flow Measuring Kit

## Series 779



### 1.0 PRODUCT DESCRIPTION

#### Available Sizes

- 4 – 12”/DN100 – DN300
- Grooved end connections

#### Maximum Working Pressure

- 300 psi/2068 kPa/21 bar

#### Operating Temperature Range

- –30°F to +300°F/–34°C to +149°C

#### Function

- Check valve with hydrodynamic inlet profile that provides a natural venturi
- Drilled, tapped and plugged inlet, ready to receive the flow measuring kit

#### Application

- Can be installed horizontally or vertically
- Allows direct connection to Victaulic Vic-300 MasterSeal™ butterfly valves or Series 377 Vic-Plug valves

### 2.0 CERTIFICATION/LISTINGS

Not applicable. Contact Victaulic with any questions.

**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	

### 3.0 SPECIFICATIONS – MATERIAL

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**Valve Body:** Ductile iron conforming to ASTM A536, Grade 65-45-12, painted black enamel. Ductile iron conforming to ASTM A395, Grade 65-45-15, is available upon special request.

**Disc Coating: (specify choice<sup>1</sup>)**

**Victaulic EPDM**

EPDM (Green color code). Temperature range –30°F to +230°F/–34°C to +110°C. NOT RECOMMENDED FOR PETROLEUM SERVICES OR STEAM SERVICES.

**Victaulic Nitrile**

Nitrile (Orange color code). Temperature range +10°F to +150°F/–12°C to +65°C. Not compatible for hot water services over +150°F/+66°C or for hot dry air over +140°F/60°C. NOT RECOMMENDED FOR HOT WATER SERVICES OR STEAM SERVICES.

**Victaulic Fluoroelastomer**

Fluoroelastomer (Blue color code). Temperature range +20°F to +300°F/–7°C to +149°C. NOT RECOMMENDED FOR HOT WATER SERVICES OR STEAM SERVICES

<sup>1</sup> Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest [Victaulic Gasket Selection Guide](#) for specific gasket service recommendations and for a listing of services which are not recommended.

**Discs:** Ductile iron conforming to ASTM A536, Grade 65-45-12, fully encapsulated in Grade “E”, “T”, or “O” elastomer. (Reference Disc Coating listed above.)

**Shaft:** Type 316 stainless steel.

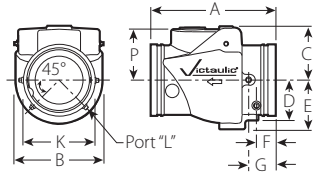
**Spring:** Type 302/304 stainless steel.

**Shaft Plug:** Carbon steel zinc plated to ASTM B633.

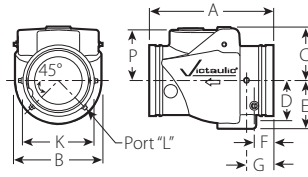
**Flow Measuring Kit** (Hardware is same for all sizes):

- Extension nipples
- Bronze access valves
- Quick disconnect for meter connection (per ISO 7241-1 Series B)

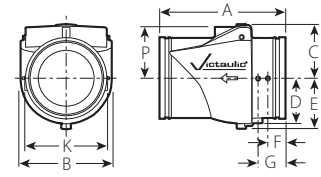
## 4.0 DIMENSIONS



Typical 4"/DN100



Typical 5 – 6"/139.7 mm – DN150



Typical 8 – 12"/DN200 – DN300

Size		Dimensions									Weight
Nominal	Actual Outside Diameter	E-E A	B	C	D	E	F	G	K	P	Approximate Each
inches DN	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	lb kg
4†	4.500	9.63	5.88	3.88	2.75	3.50	1.50	2.38	4.50	3.50	16.0
DN100	114.3	245	149	99	70	89	38	60	114	89	7.3
5†	5.563	10.50	6.75	4.50	4.25	4.25	1.65	2.38	5.88	4.08	20.0
	141.3	267	171	114	108	108	42	60	149	104	9.1
DN125†	5.500	10.50	6.75	4.50	4.25	4.25	1.65	2.38	5.88	4.08	20.0
	139.7	267	171	114	108	108	42	60	149	104	9.1
6†	6.625	11.50	8.00	5.00	4.50	4.50	1.58	2.68	6.68	4.75	28.0
DN150	168.3	292	203	127	114	114	40	68	170	121	12.7
	6.500*	11.50	8.00	5.00	4.50	4.50	1.58	2.68	6.68	4.75	28.0
	165.1	292	203	127	114	114	40	68	170	121	12.7
8*	8.625	14.00	9.88	6.06	5.06	5.68	1.75	3.25	8.88	5.75	40.0
DN200	219.1	356	251	154	129	144	44	83	226	146	18.1
10*	10.750	17.00	12.00	7.12	6.00	6.68	1.82	3.94	10.94	6.94	100.0
DN250	273.0	432	305	181	152	170	46	100	278	176	45.4
12*	12.750	19.50	14.00	8.06	6.91	7.68	1.82	3.32	12.82	7.93	140.0
DN300	323.9	495	356	205	176	195	46	84	326	201	63.5

### NOTES

- † Port "L" located 45° off centerline of valve body.
- \* Both ports on centerline of valve body

## 5.0 PERFORMANCE

Cv/Kv values for flow of water at +60°F/+16°C are shown in the table below.

### Formulas for Cv and Kv values

$$\Delta P = Q^2/Cv^2 \quad \Delta P = Q^2/Kv^2$$

$$Q = Cv \times \sqrt{\Delta P} \quad Q = Kv \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

Cv = Flow Coefficient

Kv = Flow Coefficient

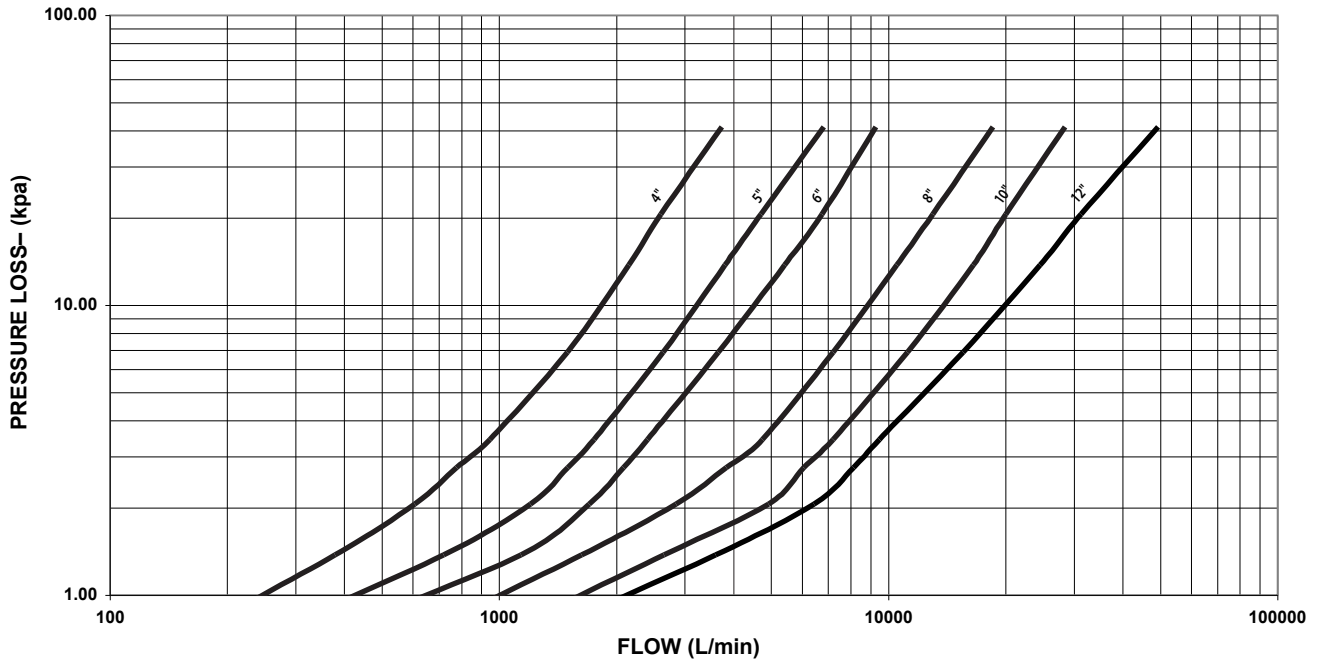
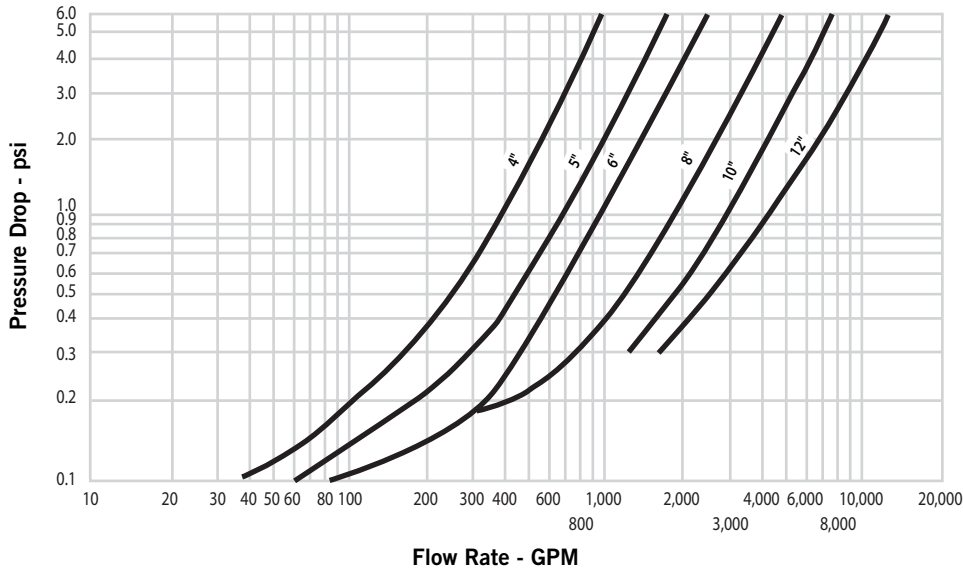
Size		Cv/Kv
Nominal inches DN	Actual Outside Diameter inches mm	(Full Open)
4 DN100	4.500	390
	114.3	337
5	5.563	700
	141.3	606
DN125	5.500	707
	139.7	606
6 DN150	6.625	1000
	168.3	865
	6.500	1000
	165.1	865
8 DN200	8.625	1800
	219.1	1557
10 DN250	10.750	3000
	273.0	2595
12 DN300	12.750	4200
	323.9	3633

### NOTE

- Placement of check valves too close to sources of unstable flow will shorten the life of the valve and potentially may damage the system. To extend valve life, valves should be installed a reasonable distance downstream from pumps, elbows, expanders, reducers or other similar devices. Sound piping practices dictate a minimum of five (5) times the pipe diameter for general use. Distances between three (3) and five (5) diameters are allowable provided the flow velocity is less than eight (8) feet per second. Distances less than three (3) diameters are not recommended and will violate the Victaulic product warranty

## 5.0 PERFORMANCE (CONTINUED)

### Flow Characteristics



## 5.0 PERFORMANCE (CONTINUED)

Tables for calculating flow rates based on venturi differential pressure measurements

### 4"/100 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.16	4.4	3	119	1.65	45.8	10	397
1.1	1.1	0.91	450	11.4	11.4	3.0	1502.8
0.28	7.7	4	159	2.38	66.0	12	476
1.9	1.9	1.22	602	16.4	16.4	3.7	1801.9
0.61	16.9	6	238	3.28	90.9	14	556
4.2	4.2	1.83	901	22.6	22.6	4.3	2104.7
1.11	30.8	8	320	4.28	118.7	16	635
7.6	7.6	2.44	1211	29.6	29.5	4.9	2403.7

### 5"/125 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.20	5.5	3	186	2.23	61.8	10	624
1.4	1.4	0.91	704	15.4	15.4	3.05	2362
0.35	9.7	4	249	3.13	86.8	12	744
2.4	2.4	1.22	942	21.6	21.6	3.66	2816
0.76	21.0	6	372	4.25	117.8	14	868
5.2	5.2	1.83	1408	29.3	29.3	4.27	3285
1.40	38.8	8	499				
9.7	9.7	2.4	1889				

### 6"/150 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.12	3.3	3	270	1.39	38.5	10	901
0.8	0.8	0.91	1022	9.6	9.6	3.05	3410
0.27	7.5	4	360	2.0	55.5	12	1081
1.9	1.9	1.22	1363	13.8	13.8	3.66	4092
0.51	14.1	6	540	2.78	77.1	14	1261
3.5	3.5	1.83	2044	19.2	19.2	4.27	4773
0.88	24.4	8	720	3.6	99.8	16	1441
6.1	6.1	2.44	2725	24.8	24.8	4.88	5454

### 8"/200 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.10	2.7	3	471	1.05	29.1	10	1559
0.7	0.7	0.91	1783	7.2	7.2	3.05	5901
0.17	4.7	4	623	1.55	43.0	12	1871
1.2	1.2	1.22	2358	10.7	10.7	3.66	7082
0.38	10.5	6	936	2.08	57.7	14	2182
2.6	2.6	1.83	3543	14.3	14.3	4.27	8259
0.68	18.8	8	1247	3.45	95.6	18	2800
4.7	4.7	2.44	47	23.8	23.8	5.49	10598

### 10"/250 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.13	3.6	3	741	1.36	37.7	10	2457
0.9	0.9	0.91	2805	9.4	9.4	3.05	9300
0.23	6.4	4	983	1.96	54.4	12	2948
1.6	1.6	1.22	3721	13.5	13.5	3.66	11158
0.49	13.6	6	1474	2.70	74.8	14	3440
3.4	3.4	1.83	5579	18.6	18.6	4.27	13020
0.88	24.4	8	1966	3.50	97.1	16	4000
6.1	6.1	2.44	7441	24.1	24.1	4.88	15140

### 12"/300 mm

$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.	$\Delta P$ PSI kPa	$\Delta P$ In. H <sub>2</sub> O kPa	Velocity* Ft./Sec m/s	Flow GPM L/min.
0.08	2.2	2	697	1.12	30.9	8	3438
0.6	0.6	0.61	2638	2.7	7.7	2.44	13013
0.18	5.0	3	1046	1.80	50.0	10	4298
1.2	1.2	0.91	3959	12.4	12.4	3.05	16266
0.33	9.1	4	1396	2.67	74.1	12	5157
2.3	2.3	1.22	5284	18.4	18.4	3.66	19519
0.71	19.7	6	2092				
4.9	4.9	1.83	7918				

## 6.0 NOTIFICATIONS

### WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

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

## 7.0 REFERENCES

[I-100: Victaulic Field Installation Handbook](#)

### 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. Victaulic recommends all products to be installed in accordance with current IMI TA installation/assembly instructions. Victaulic and IMI TA reserve the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

### Installation

Reference should always be made to the current IMI TA installation/assembly instructions for the product you are installing. For coupling and strainer installation, reference should always be made to the [I-100 Victaulic Field Installation Handbook](#) for the product you are installing. Handbooks are included with each shipment of Victaulic products for 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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