V-CONE®

CONFIGURATION SHEET

PRECISION TUBE SERIES

MODEL VP

Plain Ends

DESCRIPTION AND GENERAL PERFORMANCE SPECIFICATIONS

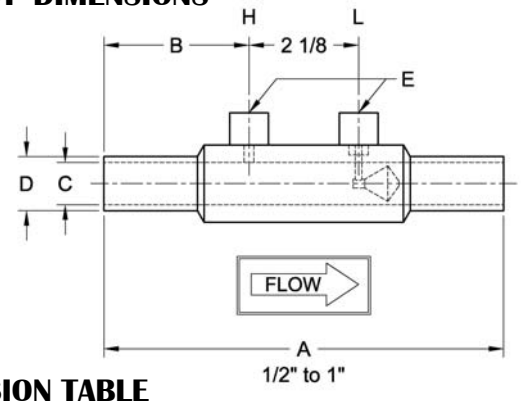
The V-Cone® flowmeter is a patented, differential pressure type flow measurement device. A cone is positioned in the center of the pipe to increase the velocity of the flowing fluid and create a differential pressure. This pressure difference can be measured and used to accurately interpret flowrate. Two taps are provided on every V-Cone to allow sensing of the high and low pressures. A typical V-Cone application can follow these general performance specifications:

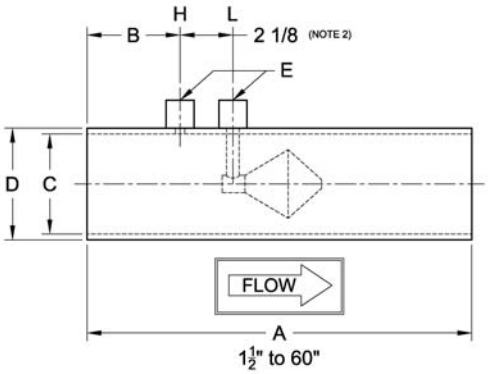
- Accuracy: up to ±0.5% of rate
- Repeatability: ±0.1%
- Turndown: 10:1
- Standard Betas: 0.45 through 0.85
- Headloss: Percentage of differential pressure produced varies with beta ratio.
- Installation: Typically 0-3 diameters upstream and 0-1 diameters downstream.

The V-Cone is manufactured under a quality management system that is certified to ISO 9001:2008.

* Each V-Cone is sized for the intended application. Specific performance ratings must be obtained through the sizing process.

MODEL VP DIMENSIONS





DIMENSION TABLE

Size	A (Note 1)		B		C-Stainless (Note 2)		C-Carbon (Note 2)		D		E (Note 2)
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	NPT
½	7.75	197	2.81	71.4	0.622	15.8	-	-	0.84	21.3	¼
¾	7.75	197	2.81	71.4	0.824	20.9	-	-	1.05	26.7	¼
1	7.75	197	2.81	71.4	1.049	26.64	-	-	1.315	33.4	¼
1½	9.75	248	2.88	73.2	1.645	41.78	-	-	1.9	48.3	¼
2	11.63	295	3.31	84.1	2.104	53.44	-	-	2.375	60.3	½
2½	11.50	292	3.25	82.6	2.504	63.60	-	-	2.875	73.0	½
3	13.50	343	3.25	82.6	3.104	78.84	-	-	3.5	88.9	½
4	15.50	394	3.75	95.3	4.090	103.8	-	-	4.5	114	½
6	21.50	546	4.00	102	6.065	154.1	6.065	154.1	6.625	168	½
8	25.25	641	4.63	118	7.981	202.7	7.981	202.7	8.625	219	½
10	27.25	692	4.63	118	10.02	254.5	10.02	254.5	10.75	273	½
12	29.25	743	4.88	124	12.00	304.8	11.94	303.3	12.75	323	½
14	29	737	5.5	140	13.25	336.6	13.13	333.5	14	355	½
16	29	737	5.5	140	15.25	387.4	15.00	381.0	16	406	½
18	31	787	5.5	140	17.25	438.2	17.25	438.2	18	457	½
20	35	889	5.5	140	19.25	489.0	19.25	489.0	20	508	½
24	47	1194	9.5	241	23.25	590.6	23.25	590.6	24	609	½
30	59	1500	9.5	241	29.25	743.0	29.25	743.0	30	762	½
36	59	1500	9.5	241	35.25	895.4	35.25	895.4	36	914	½
48	71	1803	11.5	292	47.25	1200	47.25	1200	48	1219	½
60	83	2108	11.5	292	59.25	1505	59.25	1505	60	1524	½

1. Overall length (A) tolerance varies with line size: ½" to 1", ±0.01" (±0.3mm); 1½" to 4", ±0.06" (±2mm); 6" to 10", ±0.12" (±4mm); 12" to 24", ±0.19" (±6mm); 28" to 60", ±0.25" (±7mm).
2. Typical values shown.
3. Wall pressure ports are required for vertical up flow applications.

McCROMETER

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V-CONE®

CONFIGURATION SHEET

MODEL NUMBER CONFIGURATION VP

Type	Size		Materials‡		Pipe Schedule		End Connections		Fittings	
VP										
	0A	½"	Q	S304	A	10	00	Plain	N	NPT
	0B	¾"	L	S304L	B	20			S	Socket
	01	1"	A	S316L	D	Std				
	0C	1½"	S	CS Tube	E	40				
	02	2"		S304 Cone, Support, & Couplings	F	80				
	0D	2½"		Epoxy Coated Blue (excluding cone)	J	100				
	03	3"	U	CS Tube	K	120				
	04	4"		S304 Cone, Support, & Couplings	L	140				
	06	6"		Coating / Painting Per Customer Req.	G	160				
	08	8"			H	XXS				
	10	10"			M	10S				
	12	12"			P	XS				
	14	14"								
	16	16"								
	18	18"								
	20	20"								
	24	24"								
	30	30"								
	36	36"								
	48	48"								
	60	60"								

Several types of fittings

‡Other materials can include:

HASTELLOY C-276	S321H
DUPLEX 2205	INCONEL 625
CHROMEMOLY P22/P11	PVC
MONEL K400/K500	PTFE
CARBON STEELS	
A350, A333, API5L, A106B	

Example: VP06QE00N V-Cone 6 inch line size, S304, schedule 40 pipe, plain ends, ½" NPT fittings

STANDARD PIPE SCHEDULES

Stainless Steel		Carbon Steel	
Size	Std.	Size	Std.
½" to 10"	E	6" to 16"	E
12" and up	D	18" and up	D

Meters 6" and smaller utilize seamless pipe.
Meters 8" and larger utilize welded pipe.

ABBREVIATIONS

ASME	American Society of Mechanical Engineers
NPT	National pipe taper
SS	Stainless steel
CS	Carbon steel

Technical questions can be answered through a local representative or through our application engineers.

MANUFACTURING STANDARDS

McCrometer's welders and welding procedures are qualified in accordance with ASME Section IX. All meters are visually inspected for weld defects. Specific customer requirements can be complied with upon request.

The welding can be in accordance with:

- ASME Section VIII
- ASME B31.1
- ASME B31.3

Non-destructive testing can include:

- Hydrostatic Pressure Testing
- Penetrant Examination
- Radiographic Examination
- Positive Material Inspection
- Magnetic Particle Examination

REPRESENTED BY:

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