V-CONE®

**CONFIGURATION SHEET**

**PRECISION TUBE SERIES**

# MODEL $VS_{(L)}$

## ANSI B16.5 Slip-On, Raised Face Flanges - Class 150 or 300

### 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:

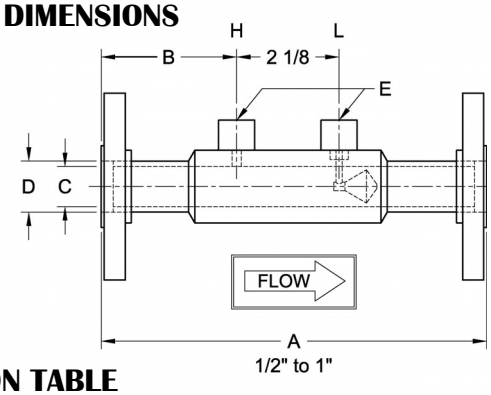
- Accuracy: up to ±0.5% of rate
- Repeatability: ±0.1%
- Turndown: 10:1
- Standard Betas: 0.45 through 0.85
- Headloss: Percentage of differential pressure produced varies with beta ratio.
- Installation: Typically 0-3 diameters upstream and 0-1 diameters downstream.

**Model VS Bulletins**
ANSI B16.5 Slip-on, RF Flanges
24509-32 Class 150 or 300
24509-33 Class 600 or 900
24509-34 Class 125 or 250

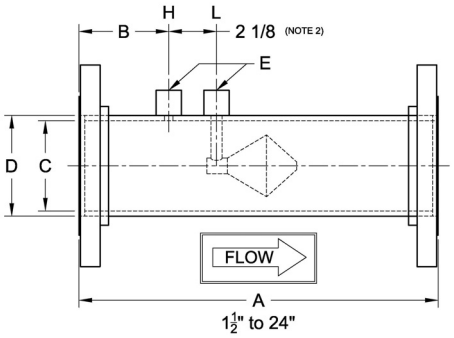
The V-Cone is manufactured under a quality management system that is certified to ISO 9001:2000.

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

### MODEL $VS_{(L)}$ DIMENSIONS



1/2" to 1"



$1\frac{1}{2}$" to 24"

### 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 | 8 | 203 | 2.9 | 75 | 0.622 | 15.8 | - | - | 0.84 | 21.3 | ¼ |
| ¾ | 8 | 203 | 2.9 | 75 | 0.824 | 20.9 | - | - | 1.05 | 26.7 | ¼ |
| 1 | 8 | 203 | 2.9 | 75 | 1.049 | 26.64 | - | - | 1.315 | 33.4 | ¼ |
| 1½ | 10 | 254 | 3 | 76 | 1.645 | 41.78 | - | - | 1.9 | 48.3 | ¼ |
| 2 | 12 | 305 | 3.5 | 89 | 2.104 | 53.44 | - | - | 2.375 | 60.3 | ½ |
| 2½ | 12 | 305 | 3.5 | 89 | 2.504 | 63.60 | - | - | 2.875 | 73.0 | ½ |
| 3 | 14 | 356 | 3.5 | 89 | 3.104 | 78.84 | - | - | 3.5 | 88.9 | ½ |
| 4 | 16 | 406 | 4 | 102 | 4.090 | 103.8 | - | - | 4.5 | 114 | ½ |
| 6 | 22 | 559 | 4.25 | 108 | 6.065 | 154.1 | 6.065 | 154.1 | 6.625 | 168 | ½ |
| 8 | 26 | 660 | 5 | 127 | 7.981 | 202.7 | 7.981 | 202.7 | 8.625 | 219 | ½ |
| 10 | 28 | 711 | 5 | 127 | 10.02 | 254.5 | 10.02 | 254.5 | 10.75 | 273 | ½ |
| 12 | 30 | 762 | 5.25 | 133 | 12.00 | 304.8 | 11.94 | 303.3 | 12.75 | 323 | ½ |
| 14 | 30 | 762 | 6 | 152 | 13.25 | 336.6 | 13.13 | 333.5 | 14 | 355 | ½ |
| 16 | 30 | 762 | 6 | 152 | 15.25 | 387.4 | 15.00 | 381.0 | 16 | 406 | ½ |
| 18 | 32 | 813 | 6 | 152 | 17.25 | 438.2 | 17.25 | 438.2 | 18 | 457 | ½ |
| 20 | 36 | 914 | 6 | 152 | 19.25 | 489.0 | 19.25 | 489.0 | 20 | 508 | ½ |
| 24 | 48 | 1219 | 10 | 254 | 23.25 | 590.6 | 23.25 | 590.6 | 24 | 609 | ½ |

1. Overall length (A) tolerance varies with line size: ½" to 1", ±1/16" (±2mm); 1½" to 10", ±1/8" (±4mm); 12" to 24", ±3/16" (±6mm).
2. Typical values shown.
3. Wall pressure ports are required for vertical up flow applications.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VCONE®

# CONFIGURATION SHEET

## MODEL NUMBER CONFIGURATION VS(L)

| Type | Size | | Materials‡ | | Pipe Schedule | | End Connections | | Fittings | |
|---|---|---|---|---|---|---|---|---|---|---|
| **VS** | | | | | | | | | | |
| | 0A | ½" | Q | S304 | A | 10 | 03 | CL 150 RF SO | N | NPT |
| | 0B | ¾" | L | S304L | B | 20 | 04 | CL 300 RF SO | S | Socket |
| | 01 | 1" | A | S316L | D | Std | | | | |
| | 0C | 1½" | P | CPVC | E | 40 | | | | |
| | 02 | 2" | N | S304 Tube, Cone, Support & Couplings | F | 80 | | | | |
| | 0D | 2½" | | CS Steel Flanges | J | 100 | | | | |
| | 03 | 3" | | Flanges painted | K | 120 | | | | |
| | 04 | 4" | S | CS Tube & Flanges | L | 140 | | | | |
| | 06 | 6" | | S304 Cone, Support, & Couplings | G | 160 | | | | |
| | 08 | 8" | | Epoxy Coated Blue (excluding cone) | H | XXS | | | | |
| | 10 | 10" | U | CS Tube & Flanges | M | 10S | | | | |
| | 12 | 12" | | S304 Cone, Support, & Couplings | P | XS | | | | |
| | 14 | 14" | | Coating / Painting Per Customer Req. | | | | | | |
| | 16 | 16" | | | | | | | | |
| | 18 | 18" | | | | | | | | |
| | 20 | 20" | | | | | | | | |
| | 24 | 24" | | | | | | | | |

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: VS06QE03N V-Cone 6 inch line size, S304, schedule 40 pipe, ANSI CL 150 RF slip on flanges, 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 | RF | Raised Face |
| CS | Carbon steel | SO | Slip On |

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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