

**MODEL VR<sub>(L)</sub>**

**ANSI B16.5 RTJ Weld Neck - 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.

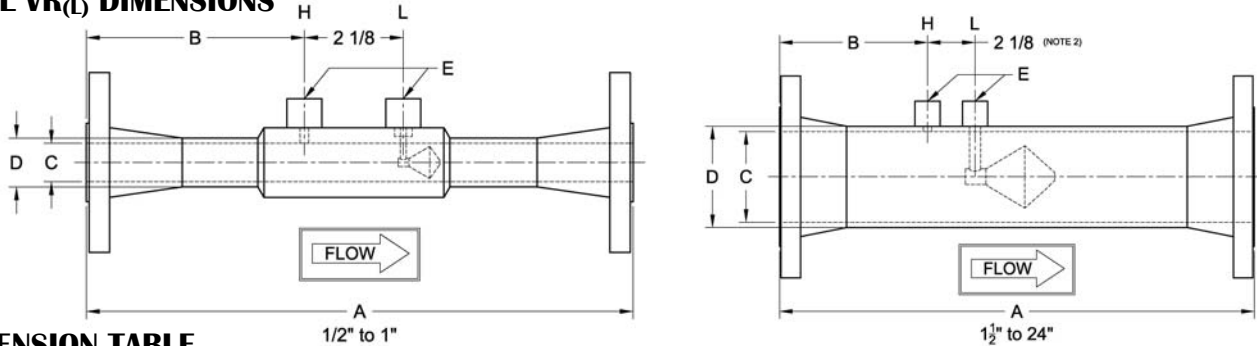
**Model VR Bulletins**  
ANSI B16.5 RTJ Weld Neck Flanges  
24509-40 Class 150 or 300  
24509-41 Class 600 or 900



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 VR<sub>(L)</sub> DIMENSIONS**



**DIMENSION TABLE**

Size	RTJ CL 150				RTJ CL 300				Stainless		Carbon		D		E (Note 2)
	A (Note 1)		B		A (Note 1)		B		C (Note 2)		C (Note 2)				
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	NPT
1/2	-	-	-	-	12.19	309.6	5.03	127.8	0.622	15.8	-	-	0.84	21.3	1/4
3/4	-	-	-	-	12.63	320.8	5.25	133.4	0.824	20.9	-	-	1.05	26.7	1/4
1	12.50	317.5	5.19	131.8	13.00	330.2	5.44	138.2	1.049	26.64	-	-	1.315	33.4	1/4
1 1/2	14.88	378.0	5.44	138.2	15.38	390.7	5.69	144.5	1.645	41.78	-	-	1.9	48.3	1/4
2	16.88	428.8	5.94	150.9	17.50	444.5	6.25	158.8	2.104	53.44	-	-	2.375	60.3	1/2
2 1/2	17.25	438.2	6.13	155.7	17.87	453.9	6.44	163.6	2.504	63.60	-	-	2.875	73.0	1/2
3	19.25	489.0	6.13	155.7	20.12	511.0	6.56	166.6	3.104	78.84	-	-	3.5	88.9	1/2
4	21.75	552.5	6.88	174.8	22.62	574.5	7.31	185.7	4.090	103.8	-	-	4.5	114	1/2
6	28.75	730.3	7.63	193.8	29.62	752.3	8.06	204.7	6.065	154.1	6.065	154.1	6.625	168	1/2
8	33.50	850.9	8.76	222.5	34.37	873.0	9.19	233.4	7.981	202.7	7.981	202.7	8.625	219	1/2
10	35.50	901.7	8.76	222.5	36.87	936.5	9.44	239.8	10.02	254.5	10.02	254.5	10.75	273	1/2
12	38.50	977.9	9.51	241.6	39.87	1013	10.19	258.8	12.00	304.8	11.94	303.3	12.75	323	1/2
14	39.25	997.0	10.63	270.0	40.62	1032	11.31	287.3	13.25	336.6	13.13	333.5	14	355	1/2
16	39.25	997.0	10.63	270.0	40.87	1038	11.44	290.6	15.25	387.4	15.00	381.0	16	406	1/2
18	42.25	1073	11.13	282.7	43.87	1114	11.94	303.3	17.25	438.2	17.25	438.2	18	457	1/2
20	46.63	1184	11.31	287.3	48.25	1226	12.13	308.1	19.25	489.0	19.25	489.0	20	508	1/2
24	59.25	1505	15.63	397.0	60.88	1546	16.44	417.6	23.25	590.6	23.25	590.6	24	609	1/2

1. Overall length (A) tolerance varies with line size: 1/2" to 1", ±1/8" (±4mm); 1 1/2" to 10", ±3/16" (±6mm); 12" to 24", ±1/4" (±7mm).
2. Typical values shown.
3. Wall pressure ports are required for vertical up flow applications.



# CONFIGURATION SHEET

## MODEL NUMBER CONFIGURATION VR(L)

Type	Size	Materials‡		Pipe Schedule	End Connections	Fittings
<b>VR</b>						
	0A 1/2"	Q	S304	A 10	19	N NPT
	0B 3/4"	L	S304L	B 20	20	S Socket
	01 1"	A	S316L	D Std		Several types of fittings
	0C 1 1/2"	S	CS Tube & Flanges	E 40		
	02 2"		S304 Cone, Support, & Couplings	F 80		
	0D 2 1/2"		Epoxy Coated Blue (excluding cone)	J 100		
	03 3"	U	CS Tube & Flanges	K 120		
	04 4"		S304 Cone, Support, & Couplings	L 140		
	06 6"		Coating / Painting Per Customer Req.	G 160	‡Other materials can include:	
	08 8"			H XXS	HASTELLOY C-276	S321H
	10 10"			M 10S	DUPLEX 2205	INCONEL 625
	12 12"			P XS	CHROMEMOLY P22/P11	
	14 14"				MONEL K400/K500	
	16 16"				CARBON STEELS	
	18 18"				A350, A333, API5L, A106B	
	20 20"					
	24 24"					

Example: VR04QE19N V-Cone 4 inch line size, S304, schedule 40 pipe, ANSI CL 150 RTJ WN, 1/2" NPT fittings

### STANDARD PIPE SCHEDULES

Stainless Steel		Carbon Steel	
Size	Std.	Size	Std.
1/2" 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	WN	Weld Neck
CS	Carbon steel	RTJ	Ring Type Joint

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:

