VCONE®

SPECIFICATION SHEET
PRECISION TUBE SERIES

MODEL VR(L)

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:

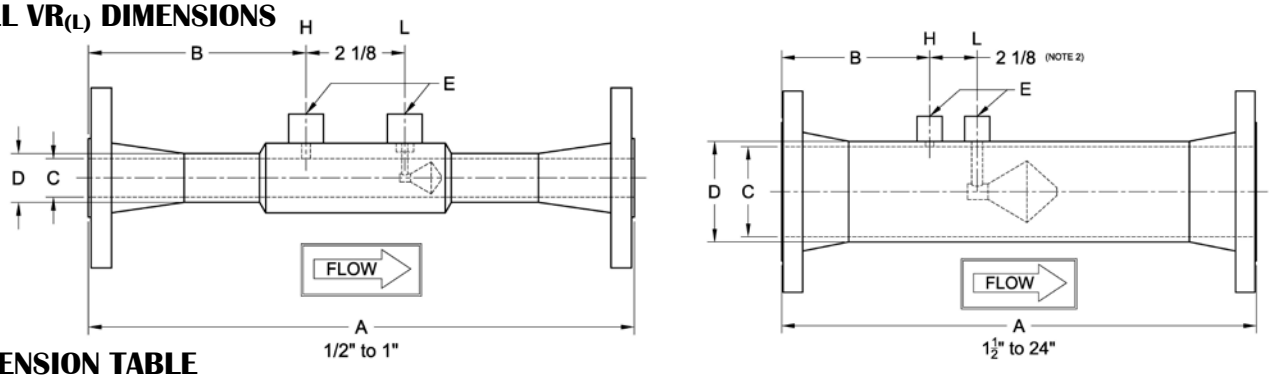
- Accuracy: up to ±0.5% of rate
- Repeatability: ±0.1%
- Turndown: 10:1
- Standard Betas: 0.45 through 0.85
- Headloss: Percentage of differential pressure produced varies with beta ratio.
- Installation: Typically 0-3 diameters upstream and 0-1 diameters downstream.

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 9001:2015.

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

MODEL VR(L) 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
½	-	-	-	-	12.19	309.6	5.03	127.8	0.622	15.8	-	-	0.84	21.3	¼
¾	-	-	-	-	12.63	320.8	5.25	133.4	0.824	20.9	-	-	1.05	26.7	¼
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	¼
1½	14.88	378.0	5.44	138.2	15.38	390.7	5.69	144.5	1.645	41.78	-	-	1.9	48.3	¼
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	½
2½	17.25	438.2	6.13	155.7	17.87	453.9	6.44	163.6	2.504	63.60	-	-	2.875	73.0	½
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	½
4	21.75	552.5	6.88	174.8	22.62	574.5	7.31	185.7	4.090	103.8	-	-	4.5	114	½
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	½
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	½
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	½
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	½
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	½
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	½
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	½
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	½
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	½

1. Overall length (A) tolerance varies with line size: ½" to 1", ±1/8" (±4mm); 1½" 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.

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V-CONE®

SPECIFICATION SHEET

MODEL NUMBER CONFIGURATION VR(L)

Type	Size		Materials‡		Pipe Schedule		End Connections		Fittings	
VR										
	0A	½"	Q	S304/L	D	Std	19	CL 150 WN RTJ	N	NPT
	0B	¾"	A	S316/L	R	30	20	CL 300 WN RTJ	S	Socket
	01	1"	S	CS Tube	E	40			F	Direct mount assembly
	0C	1½"		S304 Cone, Support, & Couplings	Q	60				
	02	2"		Epoxy Coated Blue (excluding cone)	F	80				
	0D	2½"	U	CS Tube	J	100				
	03	3"		S304 Cone, Support, & Couplings	K	120				
	04	4"	F	CS Tube, Flanges, & Couplings,	L	140				
	06	6"		316/L Cone & Supports	G	160				
	08	8"	W	CS Tube, Flanges, & Couplings,	P	XS				
	10	10"		S304/L Cone & Supports	H	XXS				
	12	12"	G	LTCS Tube, Flanges, & Couplings,						
	14	14"		S316/L Cone & Supports						
	16	16"	N	S304/L Tube, Cone, Support						
	18	18"		& Couplings CS Steel Flanges						
	20	20"								
	24	24"								

Several types of fittings available.

‡Other materials can include:
HASTELLOY C-276
DUPLEX 2205
CHROMEMOLY P22/P11
MONEL K400/K500
CARBON STEELS
A350, A333, API5L, A106B
S321H
INCONEL 625

Example: VR04QE19N V-Cone 4 inch line size, S304, schedule 40 pipe, ANSI CL 150 RTJ WN, 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	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:

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