V-CONE®

CONFIGURATION SHEET
PRECISION TUBE SERIES

MODEL VR(H)

ANSI B16.5 RTJ Weld Neck - Class 600 or 900

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:

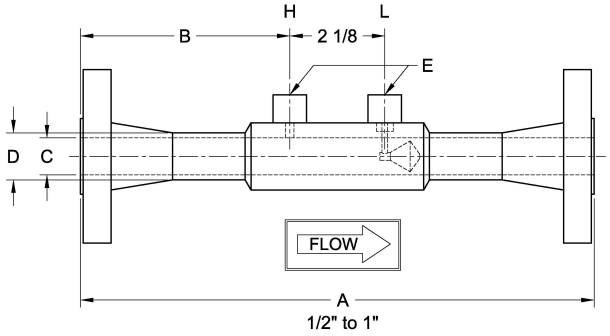
- Accuracy: up to ±0.5% of rate
- Repeatability: ±0.1%
- Turndown: 10:1
- Standard Betas: 0.45 through 0.85
- Headloss: Percentage of differential pressure produced varies with beta ratio.
- Installation: Typically 0-3 diameters upstream and 0-1 diameters downstream.

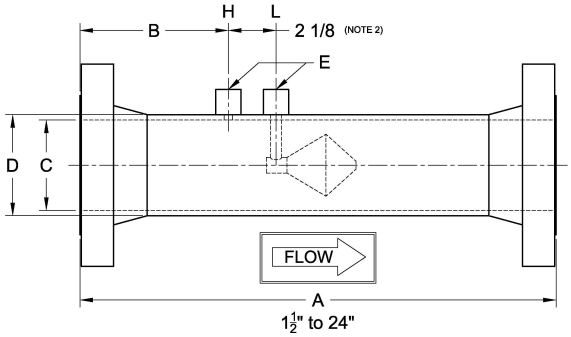
Model VR Bulletins
ANSI B16.5 RTJ Weld Neck Flanges
24509-40 Class 150 or 300
24509-41 Class 600 or 900

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

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

MODEL VR(H) DIMENSIONS





DIMENSION TABLE

Size	RTJ Class 600				RTJ Class 900				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	13.00	330.2	5.44	138.2	-	-	-	-	1.049	26.64	-	-	1.315	33.4	¼
1½	15.50	393.7	5.76	146.3	-	-	-	-	1.645	41.78	-	-	1.9	48.3	¼
2	17.75	450.9	6.37	161.8	-	-	-	-	2.104	53.44	-	-	2.375	60.3	½
2½	18.12	460.2	6.56	166.6	-	-	-	-	2.504	63.60	-	-	2.875	73.0	½
3	20.37	517.4	6.69	169.9	21.87	555.5	7.44	189.0	3.104	78.84	-	-	3.5	88.9	½
4	23.87	606.3	7.94	201.7	24.87	631.7	8.44	214.4	4.090	103.8	-	-	4.5	114	½
6	31.12	790.4	8.81	223.8	32.87	834.9	9.69	246.1	6.065	154.1	6.065	154.1	6.625	168	½
8	36.12	917.4	10.07	255.8	38.37	974.6	11.19	284.2	7.981	202.7	7.981	202.7	8.625	219	½
10	39.62	1006	10.82	274.8	42.12	1070	12.07	306.6	10.02	254.5	10.02	254.5	10.75	273	½
12	41.87	1063	11.19	284.2	45.37	1152	12.94	328.7	12.00	304.8	11.94	303.3	12.75	323	½
14	42.37	1076	12.19	309.6	46.12	1171	14.06	357.1	13.25	336.6	13.13	333.5	14	355	½
16	43.37	1102	12.69	322.3	46.37	1178	14.19	360.4	15.25	387.4	15.00	381.0	16	406	½
18	45.87	1165	12.94	328.7	49.37	1254	14.69	373.1	17.25	438.2	17.25	438.2	18	457	½
20	50.50	1283	13.25	336.6	55.00	1397	15.50	393.7	19.25	489.0	19.25	489.0	20	508	½
24	63.63	1616	17.81	452.4	70.63	1794	21.31	541.3	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.

McCROMETER
3255 W. Stetson Ave., Hemet, CA 92545 USA -- Phone (951) 652-6811 / Fax (951) 652-3078
www.mccrometer.com

Lit#24509-41 Rev. 1.8/08-08

VCONE®

CONFIGURATION SHEET

MODEL NUMBER CONFIGURATION VR(H)

Type	Size		Materials‡		Pipe Schedule		End Connections		Fittings	
VR										
	0A	½"	Q	S304	A	10	21	CL 600 WN RTJ	N	NPT
	0B	¾"	L	S304L	B	20	22	CL 900 WN RTJ	S	Socket
	01	1"	A	S316L	D	Std				
	0C	1½"	S	CS Tube & Flanges	E	40				
	02	2"		S304 Cone, Support, & Couplings	F	80				
	0D	2½"		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				
	08	8"			H	XXS				
	10	10"			M	10S				
	12	12"			P	XS				
	14	14"								
	16	16"								
	18	18"								
	20	20"								
	24	24"								

Several types of fittings

‡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: VR02QF22N V-Cone 2 inch line size, S304, schedule 80 pipe, ANSI CL 900 WN RTJ 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	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:

McCROMETER

3255 W. Stetson Ave., Hemet, CA 92545 USA -- Phone (951) 652-6811 / Fax (951) 652-3078
www.mccrometer.com

Lit#24509-41 Rev. 1.8/08-08