

MODEL VQ_(L)

ANSI B16.5 RTJ Slip-on 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.

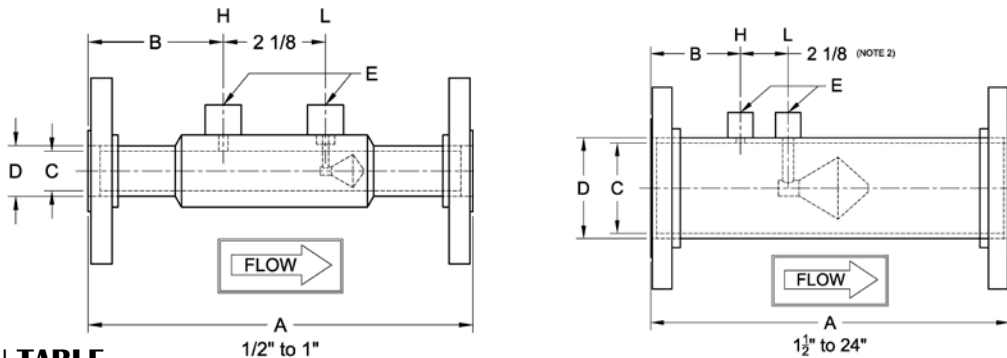
Model VQ Bulletins
RTJ Slip-on Flanges
24509-38 Class 150 or 300



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 VQ_(L) DIMENSIONS



DIMENSION TABLE

| Size | A (Note 1) | | B | | C-Stainless (Note 2) | | C-Carbon (Note 2) | | D | | E (Note 2) |
|------|------------|------|------|-----|----------------------|-------|-------------------|-------|-------|------|------------|
| | 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.



SPECIFICATION SHEET

MODEL NUMBER CONFIGURATION VQ(L)

| Type | Size | Materials‡ | | Pipe Schedule | | End Connections | | Fittings | |
|-----------|--------|------------|--|---------------|-----|-----------------|---------------|----------|--------------------------|
| VQ | | | | | | | | | |
| | 0A ½" | Q | S304/L | D | Std | 08 | CL 150 RTJ SO | N | NPT |
| | 0B ¾" | A | S316/L | R | 30 | 09 | CL 300 RTJ SO | S | Socket |
| | 01 1" | S | CS Tube S304 Cone, Support, & Couplings Epoxy Coated Blue (excluding cone) | E | 40 | | | F | Direct mount assembly |
| | 0C 1½" | | | Q | 60 | | | | |
| | 02 2" | | | F | 80 | | | | |
| | 0D 2½" | | | J | 100 | | | | |
| | 03 3" | U | CS Tube S304 Cone, Support, & Couplings | K | 120 | | | | |
| | 04 4" | | | L | 140 | | | | |
| | 06 6" | F | CS Tube, Flanges, & Couplings, 316/L Cone & Supports | G | 160 | | | | |
| | 08 8" | W | CS Tube, Flanges, & Couplings, S304/L Cone & Supports | P | XS | | | | |
| | 10 10" | | | H | XXS | | | | |
| | 12 12" | G | LTCS Tube, Flanges, & Couplings, S316/L Cone & Supports | | | | | | |
| | 14 14" | | | | | | | | |
| | 16 16" | N | S304/L Tube, Cone, Support & Couplings CS Steel Flanges | | | | | | |
| | 18 18" | | | | | | | | |
| | 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: VQ06QE08N V-Cone 6 inch line size, S304, schedule 40 pipe, CL 150 RTJ 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 | RTJ | Ring Type Joint |
| 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:

