

# Needle Valves

## MicroMetering

# VRMM Series

*Pressures to 60,000 psi (4137 bar)*

MicroMetering valves are designed for applications where more precise control of small flows is required than is possible with a standard regulating stem. Barrel and Thimble micrometer design permits settings to be repeated.

Metering is effected by a finely tapered stem acting in a precisely mated replaceable seat. Very fine stem position is achieved utilizing a 40 TPI thread. The Barrel and Thimble are set for proper metering at the factory. These valves are designed for metering only and cannot be used as a shutoff valve. Minimum flow is factory set and occurs at "0" position. **DO NOT OPERATE THE VALVE BELOW THE ZERO POSITION OR DAMAGE WILL RESULT.** When shutoff action is required, a correlated shutoff valve from AE series 10V, 30VM or 60VM should be installed in series with the MicroMetering valve.



### *MicroMetering Valve Features:*

- Barrel and Thimble design permits repeatable settings.
  - Barrel divisions every 0.025"
  - 25 Thimble divisions, each representing 0.001" stem travel
    - One revolution = 0.025" stem travel
- Cold-worked type 316 stainless steel body with stainless steel packing gland. Stem and seat are cold-worked type 316 stainless steel.
- Packing below stem threads is Teflon for the 10VRMM and 30VRMM valves and nylon-leather for the 60VRMM. For packing options, see Technical Information Section.
- SpeedBite "W" connections are used on the 10VRMM and AE High Pressure coned-and-threaded connections on 30VRMM and 60VRMM.

Autoclave valves are complemented by a complete line of fittings, tubing, check valves and line filters.



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# Needle Valves - MicroMetering

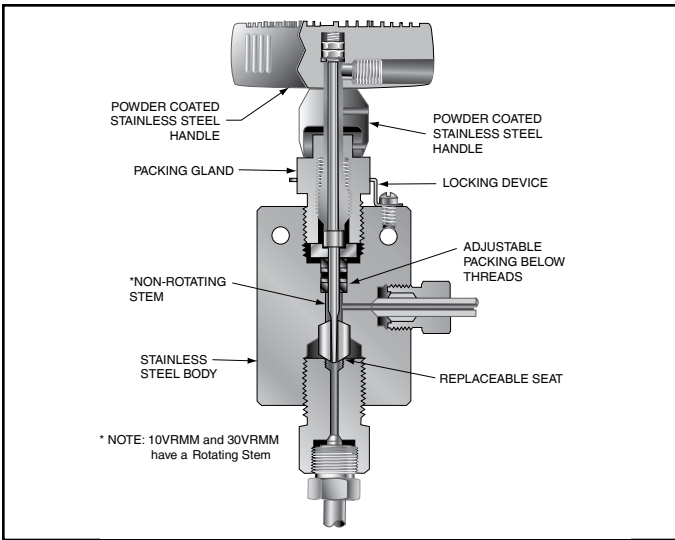
**Pressures to 60,000 psi (4137 bar)**



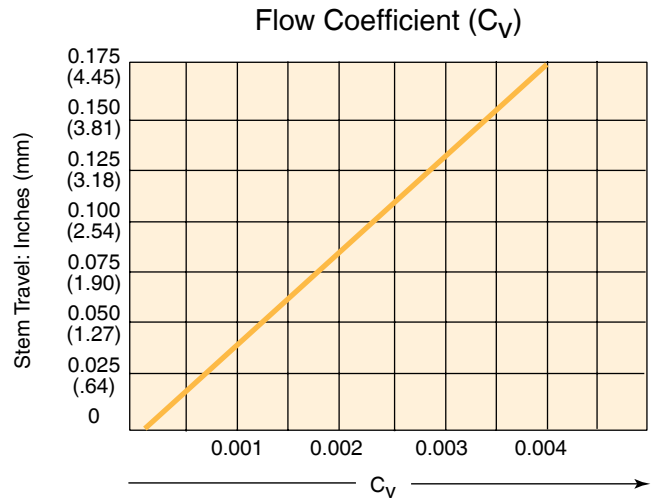
	Tube Outside Diameter Size Inches	Connection Type	Orifice Size Inches (mm)	Rated $C_v$	Pressure Rating psi (bar) @ Room Temperature**
10VRMM	1/8	W125	0.062 (1.57)	0.004	15,000 (1034)
30VRMM	1/4	F250C	0.062 (1.57)	0.004	30,000 (2069)
60VRMM	1/4	F250C	0.062 (1.57)	0.004	60,000 (4137)
60VRMM	3/8	F375C	0.062 (1.57)	0.004	60,000 (4137)

Note:

\*\* For complete temperature ratings see pressure/temperature rating guide in Technical Information section



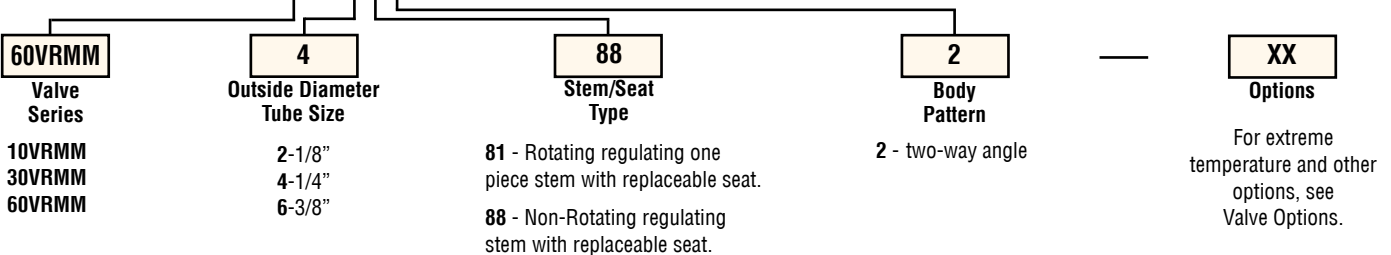
To ensure proper fit use Autoclave tubing



## Ordering Procedure

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative. VRMM Series valves are furnished complete with connection components, unless otherwise specified.

Typical catalog number: **60VRMM4882**



NOTE:

Ordering procedure for information only. Models available are shown in tables on next page.

## Valve Options

### Extreme Temperatures

Standard Autoclave valves with Teflon packing may be operated to 450°F (232°C). High temperature packing and/or extended stuffing box is available for service from -423°F (-252°C) to 1200°F (649°C) by adding the following suffixes to catalog order number.

**TG** - standard valve with Teflon glass packing to 600°F (316°C).

**GY** - standard valve with graphite braided yarn packing to 800°F (427°C).

**HT** - extended stuffing box valve with graphite braided yarn packing to 1200°F (649°C).

**B** - standard valve with cryogenic trim material and Teflon packing to -100°F (-73°C).

**LT** - extended stuffing box valve with Teflon packing & Cryogenic trim materials to -423°F (-252°C).

*Autoclave Engineers does not recommend compression sleeve connections below 0 F (-17.8 C) or above 650 F (343 C). For additional valve options, contact your Sales Representative.*

*See Needle Valve options for stem and seat coatings for erosive service.*

## Valve Maintenance

**Repair Kits:** add "R" to the front of valve catalog number for proper repair kit. (Example: **R60VRMM**)

**Valve Bodies:** Valve bodies are available. Order using the eight (8) digit part number found on the valve drawing or contact your Sales Representative for information.

Consult your Autoclave representative for pricing on repair kits and valve bodies. Refer to the Tools, Installation, Operation and Maintenance section for proper maintenance procedures.

Catalog Number	Outside Diameter Tube	Orifice Diameter	Dimensions - inches (mm)											Block Thickness	Valve Pattern
			A	B	C	D	E	F	G	G <sub>1</sub>	H*	M	N		
10VRMM2812	1/8	0.062	1.50	0.88	0.31	0.94	1.56	3.00	0.62	0.16	5.06	1.00	0.25	0.75	See Figure 1
	(3.17)	(1.57)	(38.10)	(22.35)	(7.87)	(23.87)	(39.62)	(76.20)	(15.74)	(4.06)	(128.52)	(25.40)	(6.35)	(19.05)	
* Note: M dimension is distance between holes for mounting bracket.															

30VRMM4812	1/4	0.062	2.00	1.00	0.50	1.12	2.00	3.00	0.97	0.22	5.06	0.69	0.50	1.00	See Figure 2
	(6.35)	(1.57)	(50.80)	(25.40)	(12.70)	(28.44)	(50.80)	(76.20)	(24.63)	(5.58)	(128.52)	(17.25)	(12.70)	(25.40)	
60VRMM4882	1/4	0.062	2.00	1.00	0.50	1.31	2.63	3.00	0.97	0.22	6.06	0.69	0.38	1.00	See Figure 2
	(6.35)	(1.57)	(50.80)	(25.40)	(12.70)	(33.27)	(66.80)	(76.20)	(24.63)	(5.58)	(153.92)	(17.25)	(9.65)	(25.40)	
60VRMM6882	3/8	0.062	2.00	1.00	0.53	1.31	2.63	3.00	0.97	0.22	6.06	0.69	0.38	1.00	See Figure 2
	(9.53)	(1.57)	(50.80)	(25.40)	(13.46)	(33.27)	(66.80)	(76.20)	(24.63)	(5.58)	(153.92)	(17.25)	(9.65)	(25.40)	

G - Packing gland mounting hole drill size

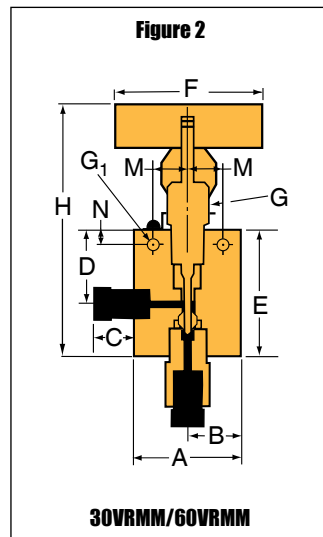
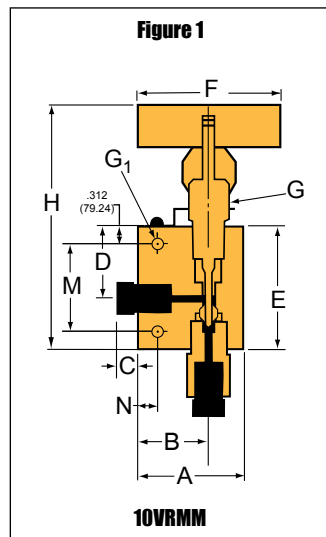
G<sub>1</sub> - Bracket mounting hole size

Panel mounting drill size: 0.22" all valves.

\* H Dimension is with stem in closed position.

All dimensions for reference only and subject to change.

**For prompt service, Autoclave stocks select products. Consult factory.**



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