

MDV86 Series Multi-Valve Manifolds

MDV86 series is a diaphragm multi-valve manifold with compact structure, designed for high ultra purity applications for the semi-conductor industry.



Surface Finish

- Standard Ra 10-15 μm
- Option Ra (Ep) 7 μm

Internal Volume

- 3.2CC

Features

- Suitable for high ultra purity applications
- 316L Stainless Steel enhances weldability and resistance to corrosion
- Both manual and pneumatic actuation are available
- Face seal fittings (FSR) or butt weld connections
- Internally spring-less design
- Metal-to-metal seal minimizes particle generation and ensures “purity integrity” in the flow passages
- 100% Helium-leak tested

Materials

- Body: 316L stainless steel
- Seat: PCTFE, Vespel®
- Diaphragm: Elgiloy®

Specifications

- Cv: 0.3
- Maximum Leak Rate
 - Inboard: 1×10^{-9} atm cc/sec He
 - Outboard: 4×10^{-9} atm cc/sec He
- Proof pressure: 150% of maximum rated pressure
- Burst pressure: 400% of maximum rated pressure

Operating Conditions

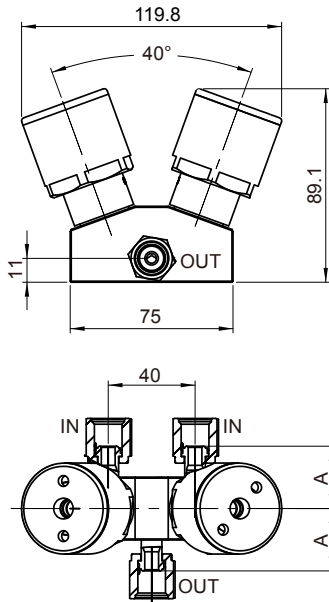
- Maximum operating pressure:
 - 3500 psi (241 bar) (Manual and Pneumatic)
 - 300 psi (20.7 bar) (Pneumatic)
- Minimum working pressure: Vacuum
- Temperature: $-40^{\circ}\text{C} \sim 65^{\circ}\text{C}$ ($40^{\circ}\text{F} \sim 150^{\circ}\text{F}$)

Pneumatic Actuator Specifications

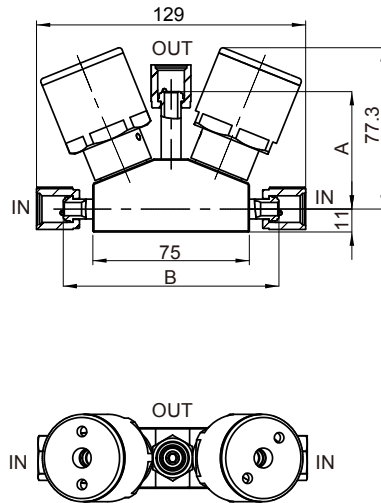
- Driving pressure: 70~125 psi
- Inlet connection: 1/8" NPT(F)
- Setting: Normally Closed or Normally Open

Dimension (mm)

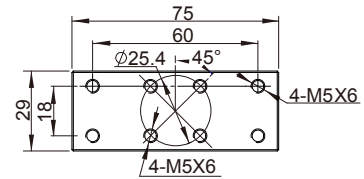
Parallel outlet



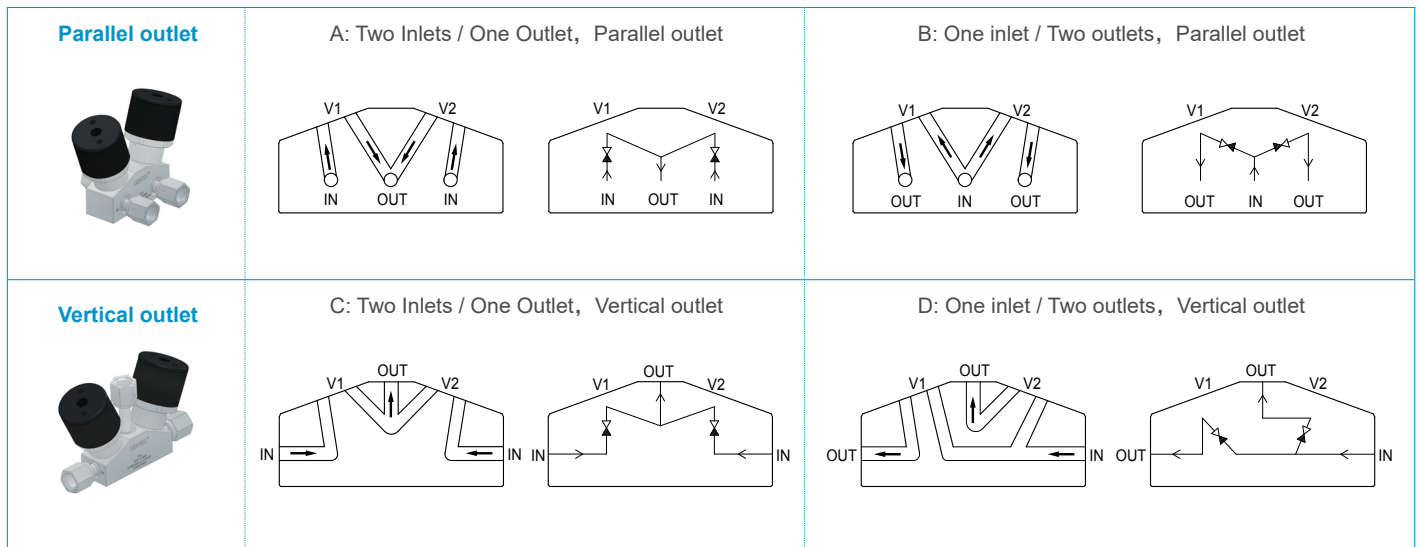
Vertical outlet



Connection Type	Dim: A Parallel outlet	Dim: A Vertical outlet	Dim: B Vertical outlet
VSM4	46.8 mm	70.0 mm	139.6 mm
VSF4	28.7 mm	57.3 mm	103.4 mm
TW6	34.5 mm	57.0 mm	115.0 mm
TW4	51.5 mm	62.0 mm	149.0 mm



Flow Diagram



Ordering Information

Ex:	SL	- MDV86 P	L	- A	- VSF4	- VSF4	- K	E	- NO
	Series	Valve Type	Working Pressure	Flow Path	Inlet Connection	Outlet Connection	Valve Seat	Surface Finish	Options
SL: 316L	MDV86	M: Manual P: Pneumatic actuator	L: 300 psi	A: Two Inlets / One Outlet, Parallel outlet B: One inlet / Two outlets, Parallel outlet C: Two Inlets / One Outlet, Vertical outlet D: One inlet / Two outlets, Vertical outlet	VSF4 TW6 TW4	VSF4 TW6 TW4	K: PCTFE V: Vespe ^l	None: 10-15µin E: 7µin	Blank: Standard NO: Low pressure Pneumatic (N/O*) NC: Low pressure Pneumatic (N/C*)

* N/C stands for normally closed while N/O stands for normally opened

Inlet & Outlet Connections		
Type	Dimensions	
VM: Face seal male (FSR fittings)	4, 8	4 = 1/4"
VSM: Face seal swivel male (FSR fittings)	4, 8	6 = 3/8"
VSF: Face seal swivel female (FSR fittings)	4, 8	8 = 1/2"
TW: Butt weld	4, 6, 8	