

MULTI-PORT MONOBLOCK VALVE

HMB & 2BE SERIES



DIAPHRAGM MONOBLOCK VALVE

HMB SERIES

A Standard models UHP Diaphragm Sealed 2-Valve 3-Port Monoblock to simplifying the integration of a purge line into a gas system. The Monoblock valve is available with soft replaceable plug-in seat, made according to UHP specifications. These models come with a connection joint size of 1/4" as a standard. Available in a variety of sizes, configurations and ports sides with a different flow path for a wide range of applications.



MATERIALS OF CONSTRUCTION - WETTED PARTS

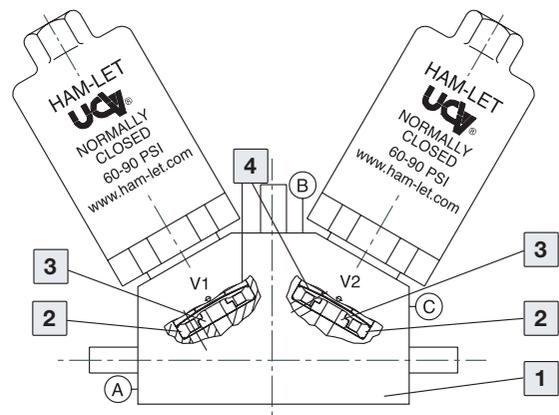
Item No.	Parts	Material
1	Body	SS316L Var or Vim/Var ⁽¹⁾
2	Seat Holder	SS316L Var or Vim/Var ⁽¹⁾
3	Seat	PCTFE, *Polyimide
4	Diaphragm	Co-Cr-Ni Alloy

⁽¹⁾ Per SEMI F20-0305
* Optional

UCV - HM SPECIFICATIONS

Structure	Direct-seal metal-diaphragm valve without seal packing manually and pneumatically operated
Design Pressure	Vacuum to 150psi (10bar)/300psi (20 bar)
Burst Pressure	Vacuum to 4500psi (310 bar)
Proof Pressure	Vacuum to 225psi (15.5 bar)
Operating Temperature: Standard	14 to 140°F, -10 to 60°C (PCTFE Seat)
Available	14 to 302°F, -10 to 150°C (*Polyimide Seat)
Leakage: Inboard Leakage	$\leq 3 \times 10^{-9}$ atm cc He/sec
Outboard Leakage	$\leq 1 \times 10^{-9}$ atm cc He/sec
Across the Seat Leakage	$\leq 1 \times 10^{-9}$ atm cc He/sec
Particle	No particle detected above 0.1µm.
Connections	Face seal or tube weld
CV Value	0.3
Surface Finish Ra (Ave)- Standard	5 µin
Air Connection (Pneumatic)	1/8" NPT
Actuator Air Supply (Pneumatic)	60 to 90 psig (4 to 6 bar)

*Used with Fluorocarbon FKM O-ring



PANEL MOUNTING - STANDARD

Standard, eight threaded holes (M5).

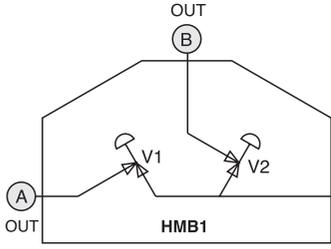
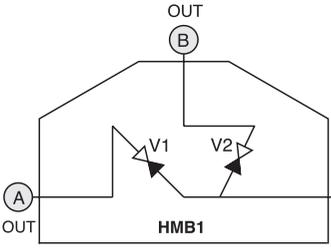
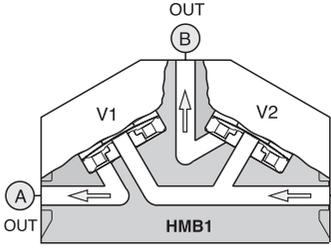
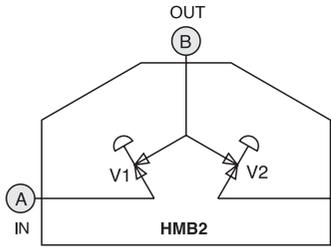
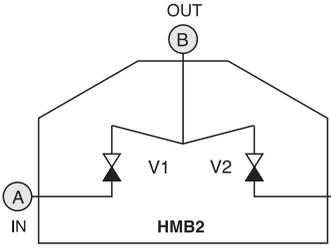
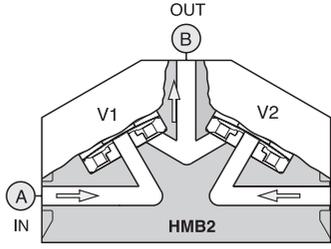
Warning!

The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

A B C

THREE STAGES FOR ORDERING MONOBLOCK VALVES

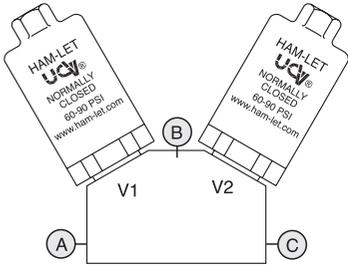
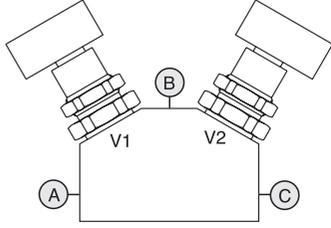
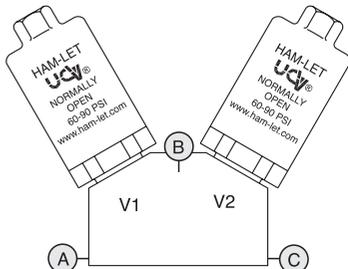
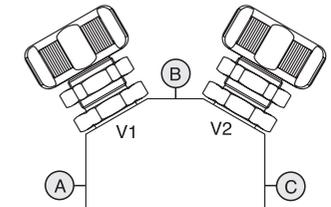
STAGE **A** FLOW PATTERN

	Schematic Flow Path	Schematic Flow Chart	Flow Direction
HMB1			
HMB2			

V1, V2 are the inside valves
 (A) (B) (C) are valves port sides

"IN" - defined as a port connected to the region below the valve seat.
 "OUT" - defined as a port connected to the region above the valve seat.

STAGE **B** ACTUATION DEVICE*

Actuation Type	Actuation Mode	Description	Actuation Type	Actuation Mode	Description
Pneumatic	C	Air Operated Normally Closed 	Manual	LQ	Oval Handle 1/4 turn 
	O	Air Operated Normally Open 		LR	Round Handle 3/4 turn 

DIAPHRAGM MONOBLOCK VALVE

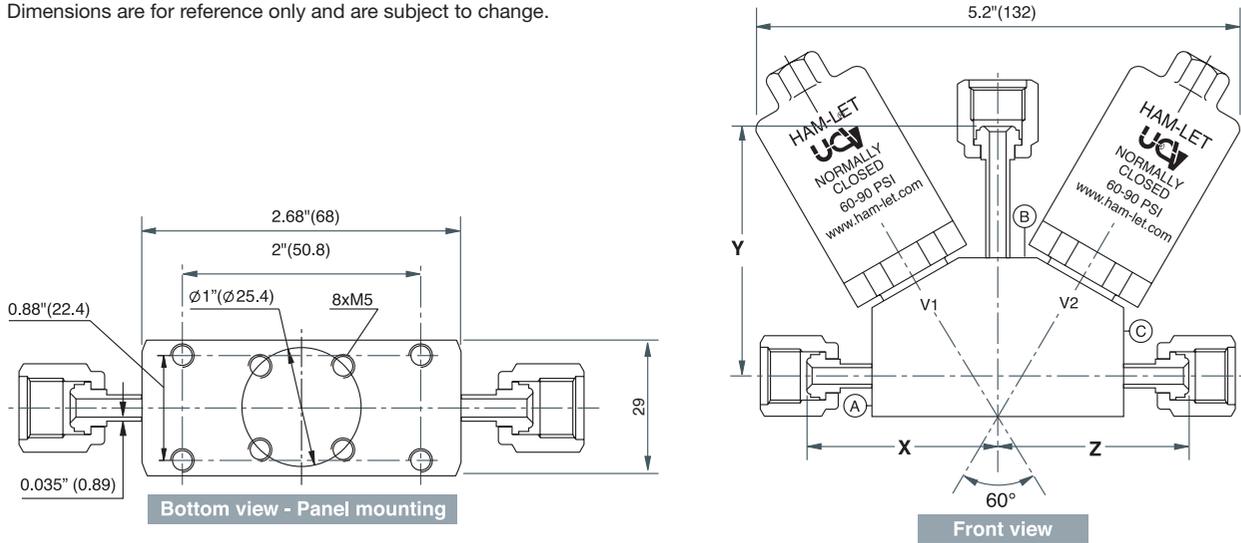
HMB SERIES

STAGE C END CONNECTIONS AND DIMENSIONS

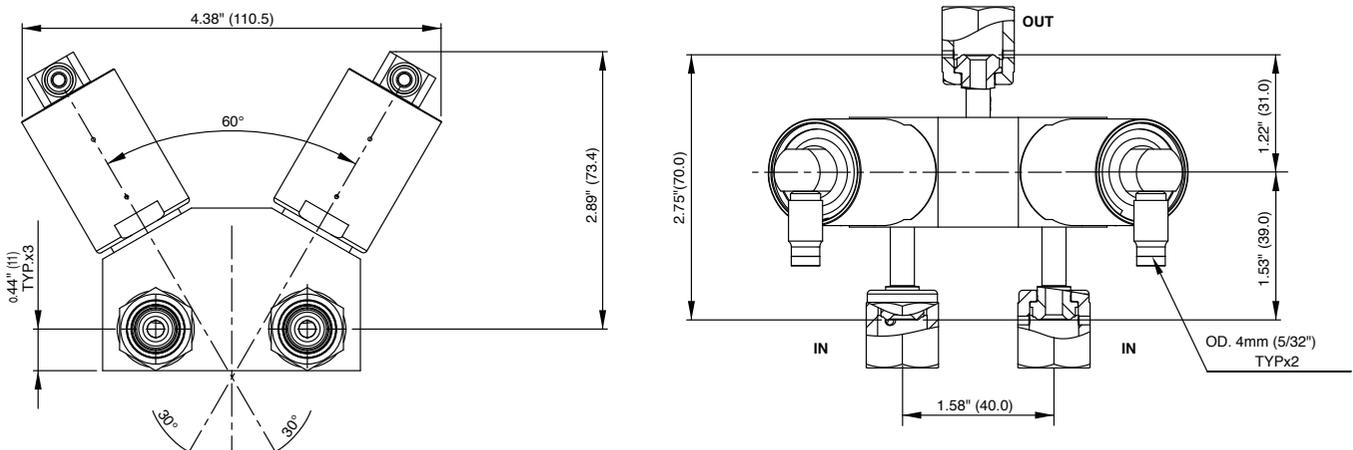
Connection Type	Size	End Connection	X		Y		Z	
			in	mm	in	mm	in	mm
Butt Weld	1/4	BW4	1.64	41.7	1.56	39.7	1.64	41.7
Swivel Female Face-Seal	1/4	GF4	2.03	51.6	2.66	67.6	2.03	51.6
Swivel Male Face-Seal	1/4	GM4	2.39	60.7	3.35	85.1	2.39	60.7

Dimensions are for standard monoblock valves.
For special customer dimensions, please consult HAM-LET.

Dimensions are for reference only and are subject to change.



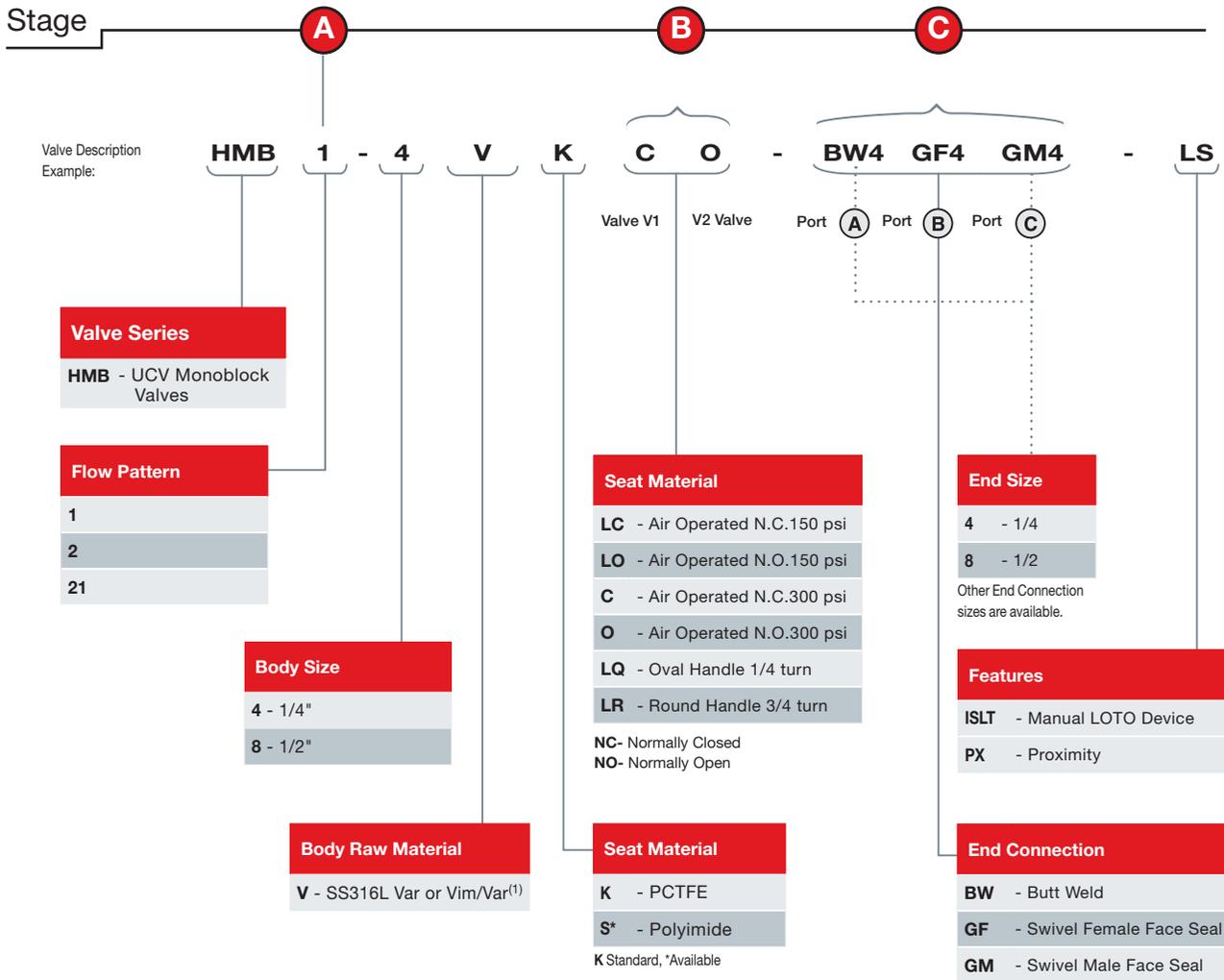
DIAPHRAGM MONOBLOCK VALVE HMB21 SERIES



*Can also be used for reversed flow

(1) Per SEMI F20-0305

ORDERING INFORMATION HMB SERIES



MATERIALS OF CONSTRUCTION - WETTED PARTS

		HMB1 - 4VKCO - BW4GF4GM4		HMB2 - 4VSLQLQ - GF4*
Flow Pattern - Stage A	1	Flow Pattern - 1	2	Flow Pattern - 2
Body Size	4	1/4	4	1/4
Body Material	V	SS316L Var or Vim/Var ⁽¹⁾	V	SS316L Var or Vim/Var ⁽¹⁾
Seat Material	K	PCTFE	S	Polyimide
Actuation device - Stage B	C	Valve V1 - Air Operated, Normally Closed	LQ	Valve V1 -Oval Handle 1/4 turn
	O	Valve V2 -Air Operated, Normally Open	LQ	Valve V2 -Oval Handle 1/4 turn
End connection - Stage C	BW	Port (A) Butt Weld	GF	Port (A) Swivel Female Face Seal
	GF	Port (B) Swivel Female Face Seal	GF	Port (B) Swivel Female Face Seal
	GM	Port (C) Swivel Male Face Seal	GF	Port (C) Swivel Female Face Seal
End Size	4	1/4	4	1/4

⁽¹⁾ Per SEMI F20-0305

* If the end connections are the same, use the end connection description only once.

DIAPHRAGM MONOBLOCK VALVE 2BE SERIES

Metal Diaphragm Valves

Standard models from the Ultra-Clean Valve Series made according to UHP specifications.

These models come with a end connections size of 1/4" as a standard.

The seat structure offers superb leak performance for enhanced reliability.



PART NUMBER / DIMENSIONS

Part Number/ep	Size	End Connection	A	B	C	D	E	F	G	H	I	J	K
2BEV4R-MV	1/4	Male HTC®	62.5	62.5	62.5	45	11	(53.5)	12	40	(53.5)	40	12
2BEF4R-MV	1/4	Male HTC®	62.5	62.5	62.5	45	11	(53.5)	12	40	(53.5)	40	12
2BEH4R-FV	1/4	Female HTC®	57.5	57.5	57.5	35	11	(53.5)	12	40	(53.5)	40	12
2BEV4C-FV	1/4	Female HTC®	57.5	57.5	57.5	35	11	(50)	12	40	(50)	40	12
2BEF4C-FV	1/4	Female HTC®	57.5	57.5	57.5	35	11	(50)	12	40	(50)	40	12
2BEH4C-MV	1/4	Male HTC®	62.5	62.5	62.5	45	11	(50)	12	40	(50)	40	12

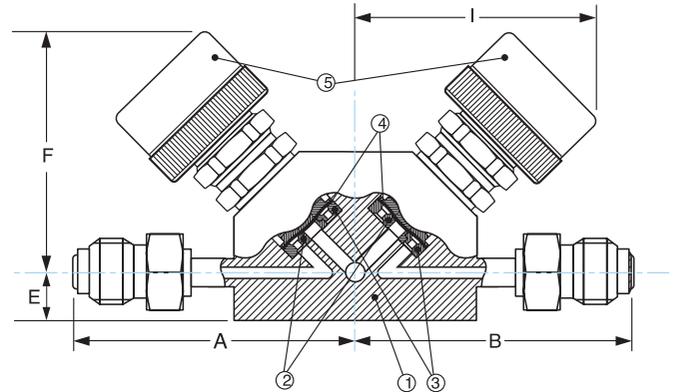
SPECIFICATIONS

Size	Design Pressure	Burst Pressure	Proof Pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
E	1MPa	31MPa	1.5MPa	-10 60°C	0.1	3 X 10 ⁻¹²	3 X 10 ⁻¹⁰
D	1MPa	31MPa	1.5MPa		0.3	Pa m ³ /sec	Pa m ³ /sec
H	16.2MPa	63.5MPa	24MPa		0.1	Helium	Helium

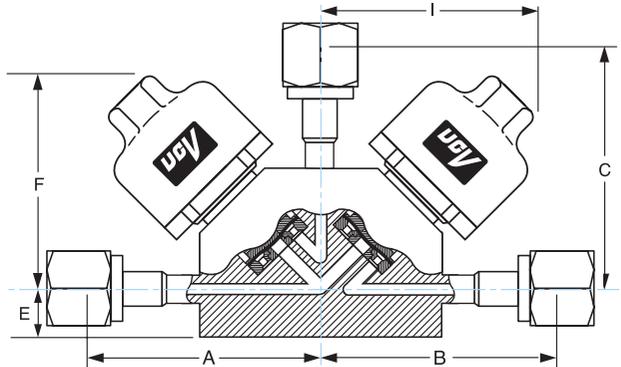
STRUCTURE

Item No.	Parts	Material
1	Body	316L Stainless Steel
2	Seat	PCTFE
3	Seat Holder	316L Stainless Steel
4	Diaphragm	Ni-Co Alloy
5	Handle/Act	Aluminum

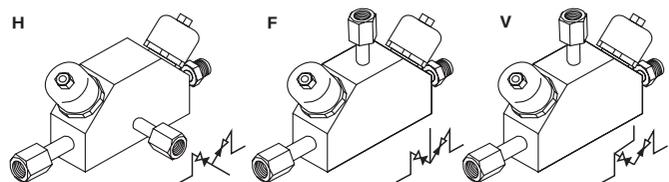
PORT DESIGNATOR- F



PORT DESIGNATOR- V



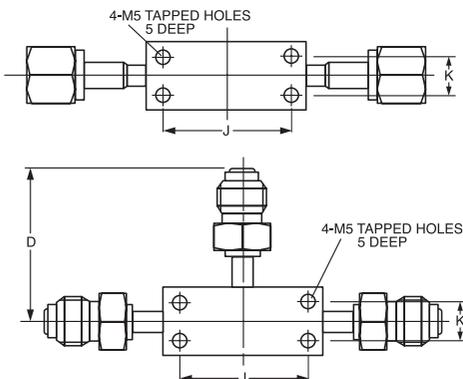
PORT DESIGNATOR



ORDERING INFORMATION

2B H V 4 C - MV

Specification	Flow Pattern	Size	Operation	End Connection
E - 1MPa	V - V-Flow	4 - 1/4	R - Round Handle	MV - Male HTC®
D - 1MPa	H - H-Flow		C - Normally Closed	FV - Female HTC®
H - 16.2MPa	F - F-Flow		O - Normally Open	



To make a safe choice when selecting your product, review the entire design of your system implementation to ensure safe, trouble-free system operations. Relevant system considerations should cover functionality, suitability of materials to specific applications and numeric data. Correct installation, handling and maintenance of valves is the responsibility of the systems designer and the user.

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