HAM-LET MULTI-PORT MONOBLOCK VALVE

HMB & 2BE SERIES

UCV®

DIAPHRAGM MONOBLOCK VALVE
HMB SERIES

A Standard model UHP Diaphragm Sealed 2-Valve 3-Port Monoblock for 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 port sides with a different flow path for a wide range of applications.

MATERIALS OF CONSTRUCTION - WETTED PARTS

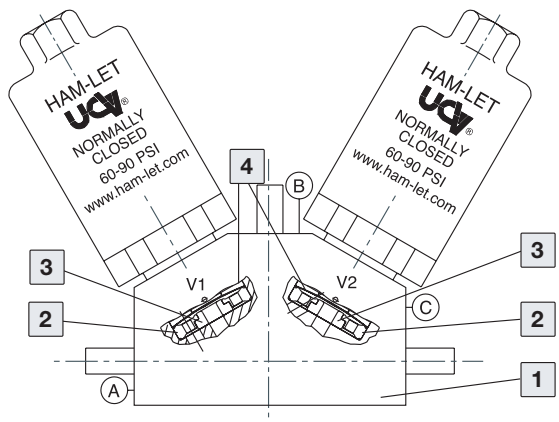
Item No.	Parts	Material
1	Body	SST 316L Var or Vim/Var(1)
2	Seat Holder	SST 316L Var or Vim/Var(1)
3	Seat	PCTFE, *Polyimide
4	Diaphragm	Co-Cr-Ni Alloy

(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	≤3x11^{-9} atm cc He/sec
Outboard Leakage	≤ 1x10^{-9} atm cc He/sec
Across the Seat Leakage	≤ 1x10^{-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



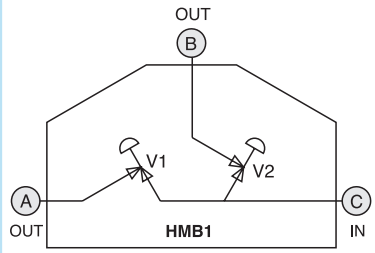
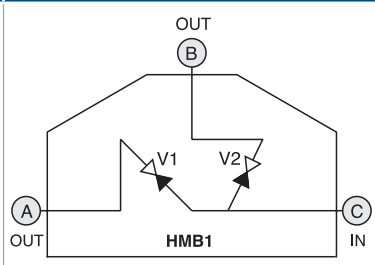
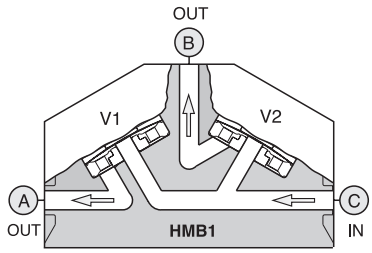
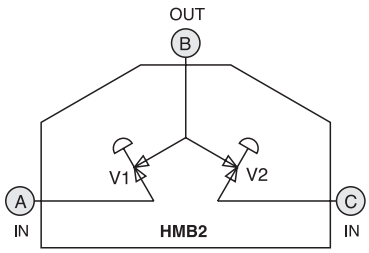
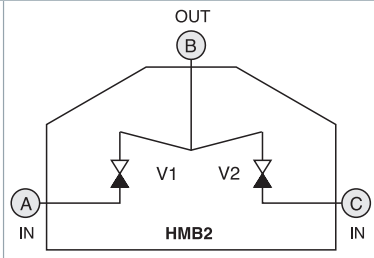
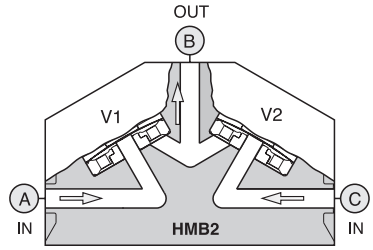
PANEL MOUNTING - STANDARD
Standard, eight threaded holes (M5).

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.

THREE STAGES FOR ORDERING MONOBLOCK VALVES

A B C

STAGE A FLOW PATTERN

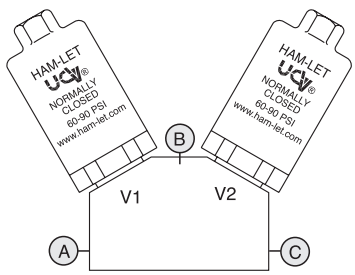
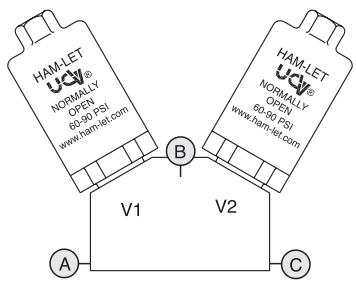
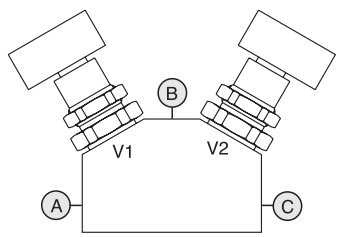
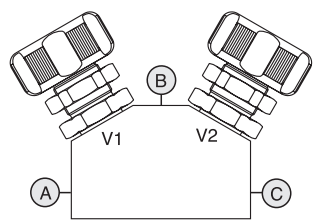
	Schematic Flow Path	Schematic Flow Chart	Flow Direction
HMB1			
HMB2			

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*

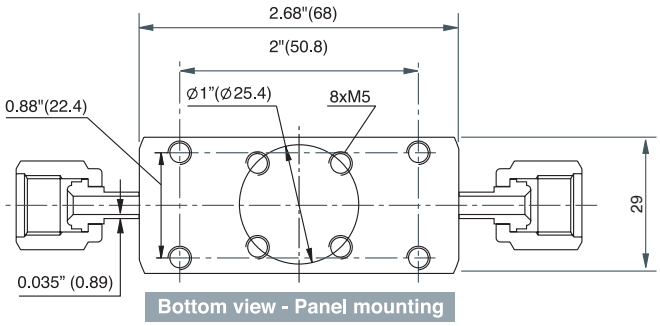
Actuation Type	Actuation Mode	Description
Pneumatic	C	Air Operated Normally Closed 
	O	Air Operated Normally Open 
Manual	LQ	Oval Handle 1/4 turn 
	LR	Round Handle 3/4 turn 

DIAPHRAGM MONOBLOCK VALVE
HMB SERIES

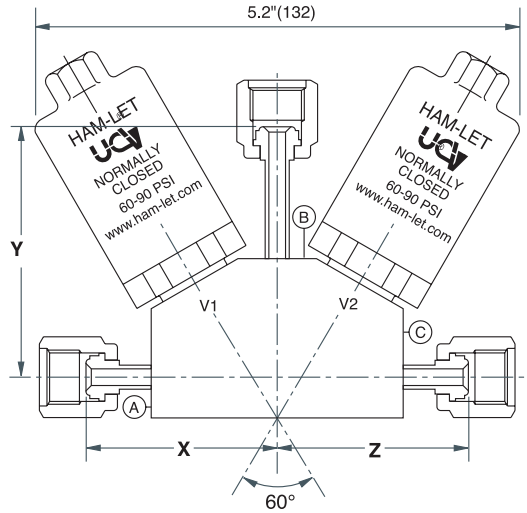
STAGE C END CONNECTIONS AND DIMENSIONS								
Connection Type	Size	End Connection	X		Y		Z	
	in		in	mm	in	mm	in	mm
Butt Weld	1/4	BW4	1.64	41.7	1.56	39.7	1.64	41.7
Swivel Female Face-Seal	1/4	GF4	2.03	51.6	2.66	67.6	2.03	51.6
Swivel Male Face-Seal	1/4	GM4	2.39	60.7	3.35	85.1	2.39	60.7

Dimensions are for standard monoblock valves.
For custom dimensions, please contact you local sales representative.

Dimensions are for reference only and are subject to change.

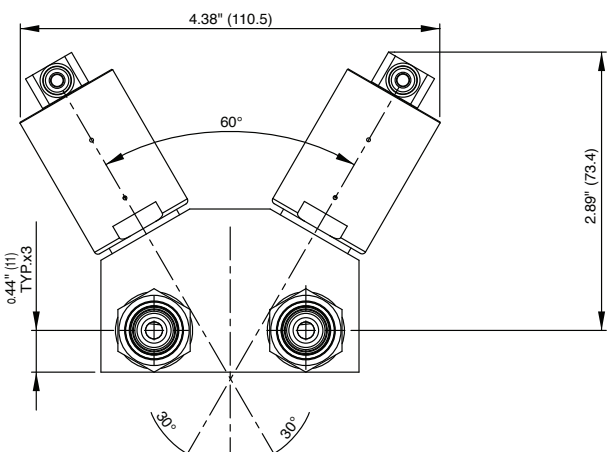


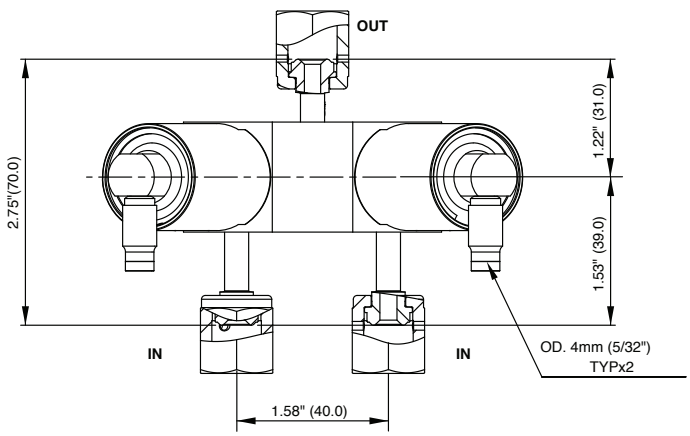
Bottom view - Panel mounting



Front view

DIAPHRAGM MONOBLOCK VALVE HMB21 SERIES

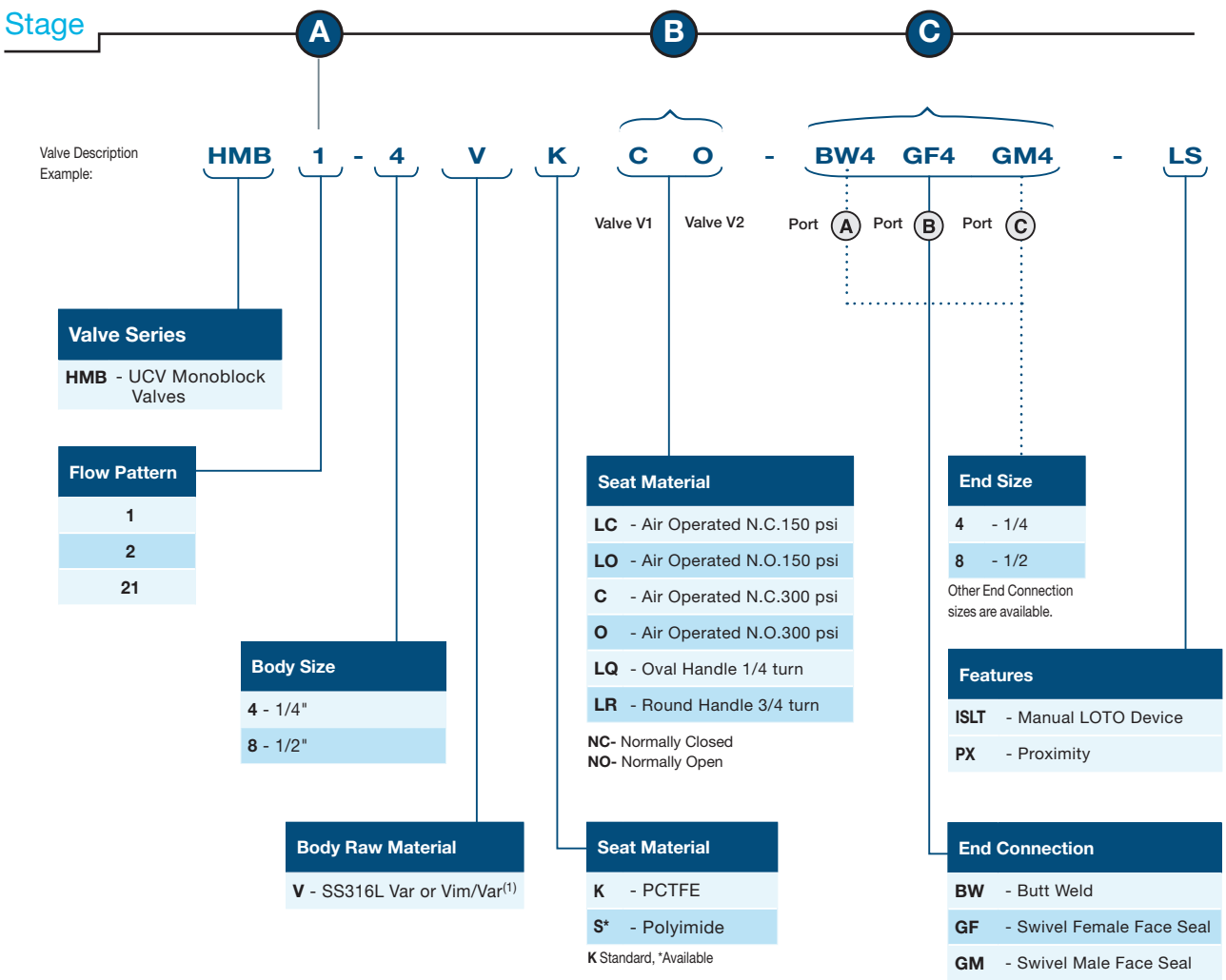




*Can also be used for reversed flow

(1) Per SEMI F20-0305

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	SST 316L Var or Vim/Var(1)	V	SST S316L 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 an 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	I	J	K
	inch		mm	mm	mm	mm	mm	mm	mm	mm	mm
2BEV4R-MV	1/4	Male HTC®	62.5	62.5	62.5	45	11	(53.5)	(53.5)	40	12
2BEF4R-MV	1/4	Male HTC	62.5	62.5	62.5	45	11	(53.5)	(53.5)	40	12
2BEH4R-FV	1/4	Female HTC	57.5	57.5	57.5	35	11	(53.5)	(53.5)	40	12
2BEV4C-FV	1/4	Female HTC	57.5	57.5	57.5	35	11	(50)	(50)	40	12
2BEF4C-FV	1/4	Female HTC	57.5	57.5	57.5	35	11	(50)	(50)	40	12
2BEH4C-MV	1/4	Male HTC	62.5	62.5	62.5	45	11	(50)	(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} Pa m^3/sec Helium	3 X 10^{-10} Pa m^3/sec Helium
D	1MPa	31MPa	1.5MPa		0.3		
H	16.2MPa	63.5MPa	24MPa		0.1		

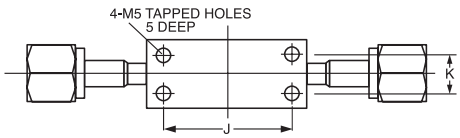
STRUCTURE

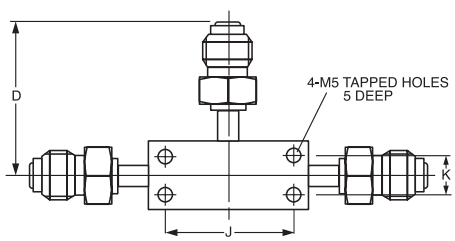
Item No.	Parts	Material
1	Body	316L Stainless Steel
2	Seat	PCTFE
3	Seat Holder	316L Stainless Steel
4	Diaphragm	Ni-Co Alloy
5	Handle/Act	Aluminum

ORDERING INFORMATION

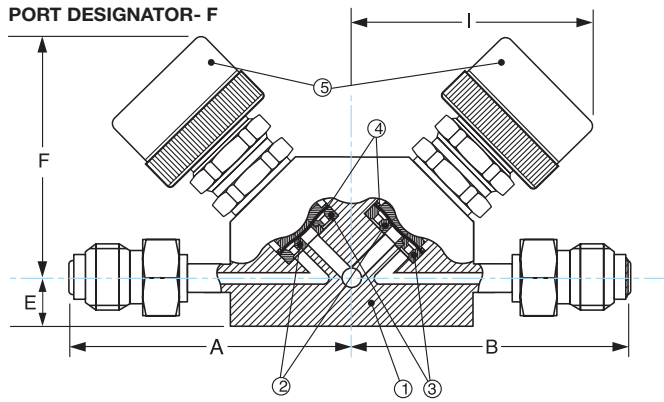
2B H V 4 C - MV

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	

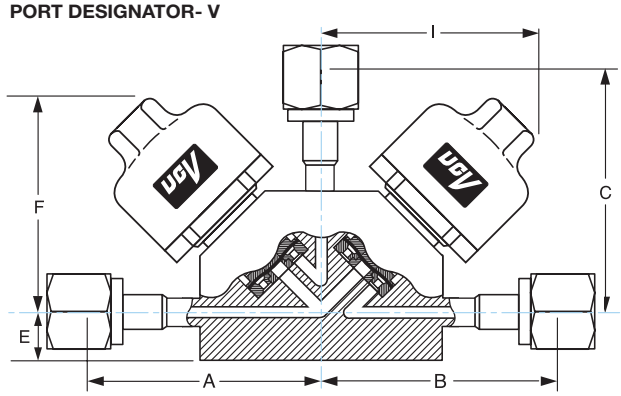




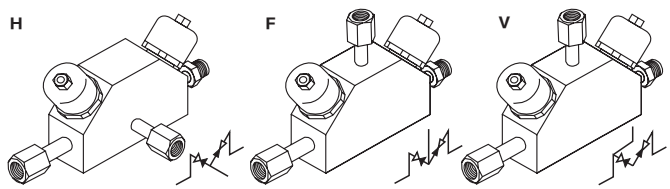
PORT DESIGNATOR- F



PORT DESIGNATOR- V



PORT DESIGNATOR



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.