MULTI–PORT MONOBLOCK VALVE **HMB&2BE** SERIES

HAM-LET®
ADVANCED CONTROL TECHNOLOGY

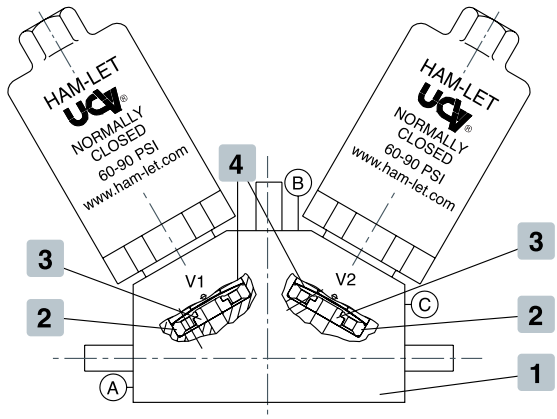
ULTRA CLEAN VALVES

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

* Optional

UCV - HM SPECIFICATIONS	
Structure	Direct-seal metal-diaphragm valve without seal packing manually and pneumatically operated
Item Pressure	Vacuum to 150psi (10bar)/300psi (20 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

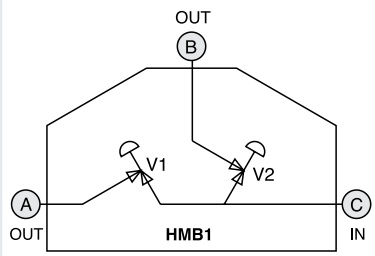
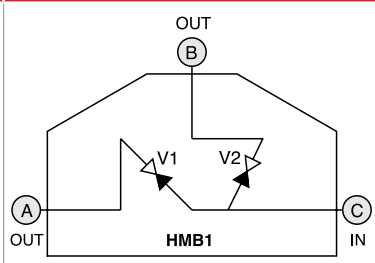
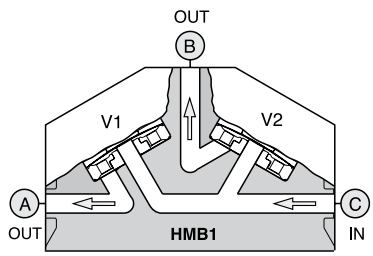
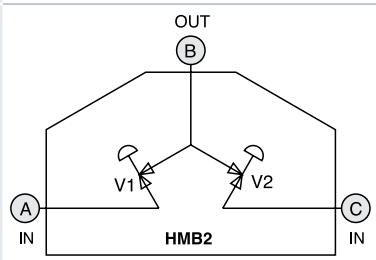
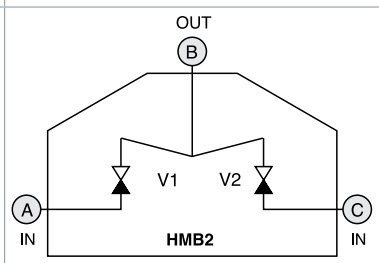
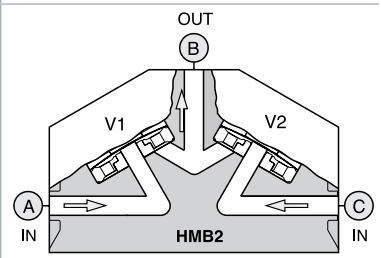
Standard, eight threaded holes (M5).

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

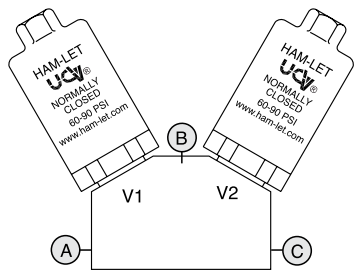
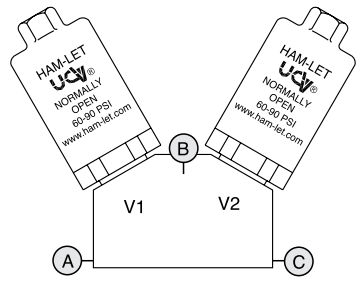
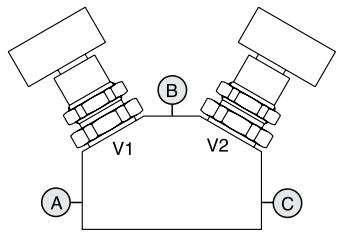
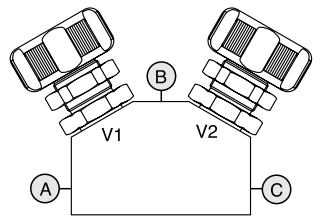
(A) (B) (C) are valves port sides

"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.

(1) Per SEMI F20-0305

STAGE B ACTUATION DEVICE*

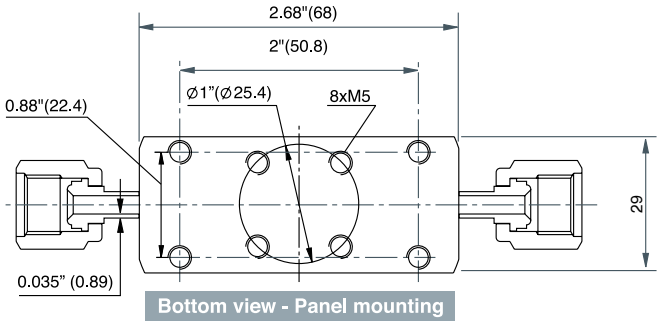
Actuation Type	Actuation Mode	Description
Pneumatic	C	Air Operated Normally Closed 
	O	Air Operated Normally Open 
Manual	LQ	Ovel Handle 1/4 turn 
	LR	Round Handle 3/4 turn 

STAGE C END CONNECTIONS AND DIMENSIONS

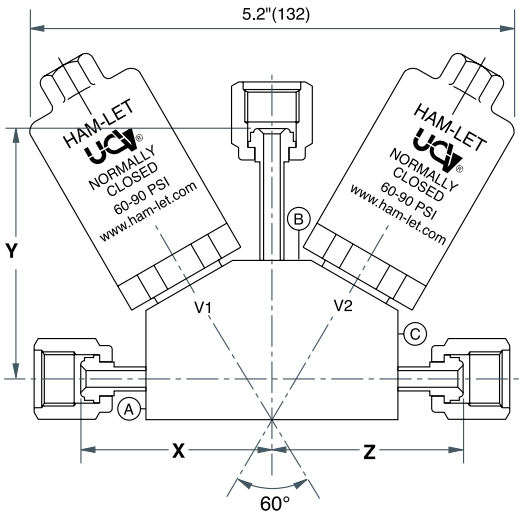
Connection Type	Size	End Connection	X		Y		Z	
			in	mm	in	mm	in	mm
Butt Weld	1/4''	BW4	1.64	41.7	1.56	39.7	1.64	41.7
Swivel Female Face-Seal	1/4''	GF4	2.03	51.6	2.66	67.6	2.03	51.6
Swivel Male Face-Seal	1/4''	GM4	2.39	60.7	3.35	85.1	2.39	60.7

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

Dimensions are for reference only, and are subject to change.



Bottom view - Panel mounting



Front view

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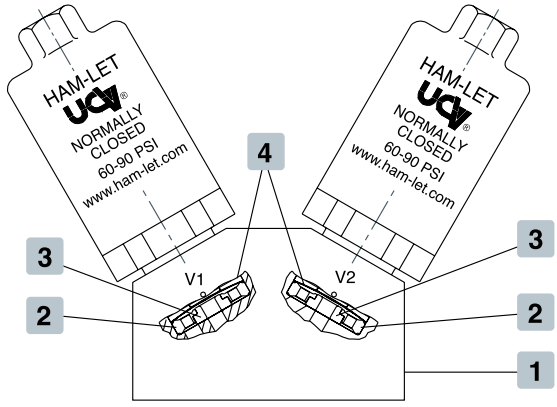

PANEL MOUNTING – STANDARD

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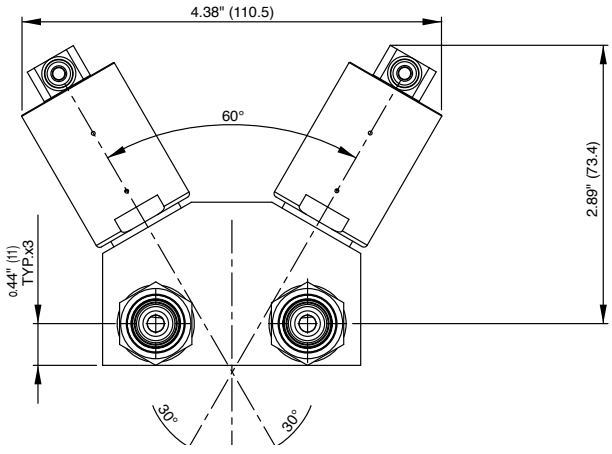
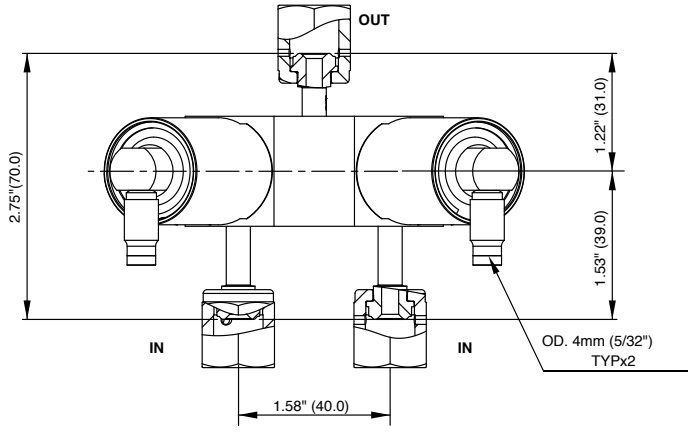
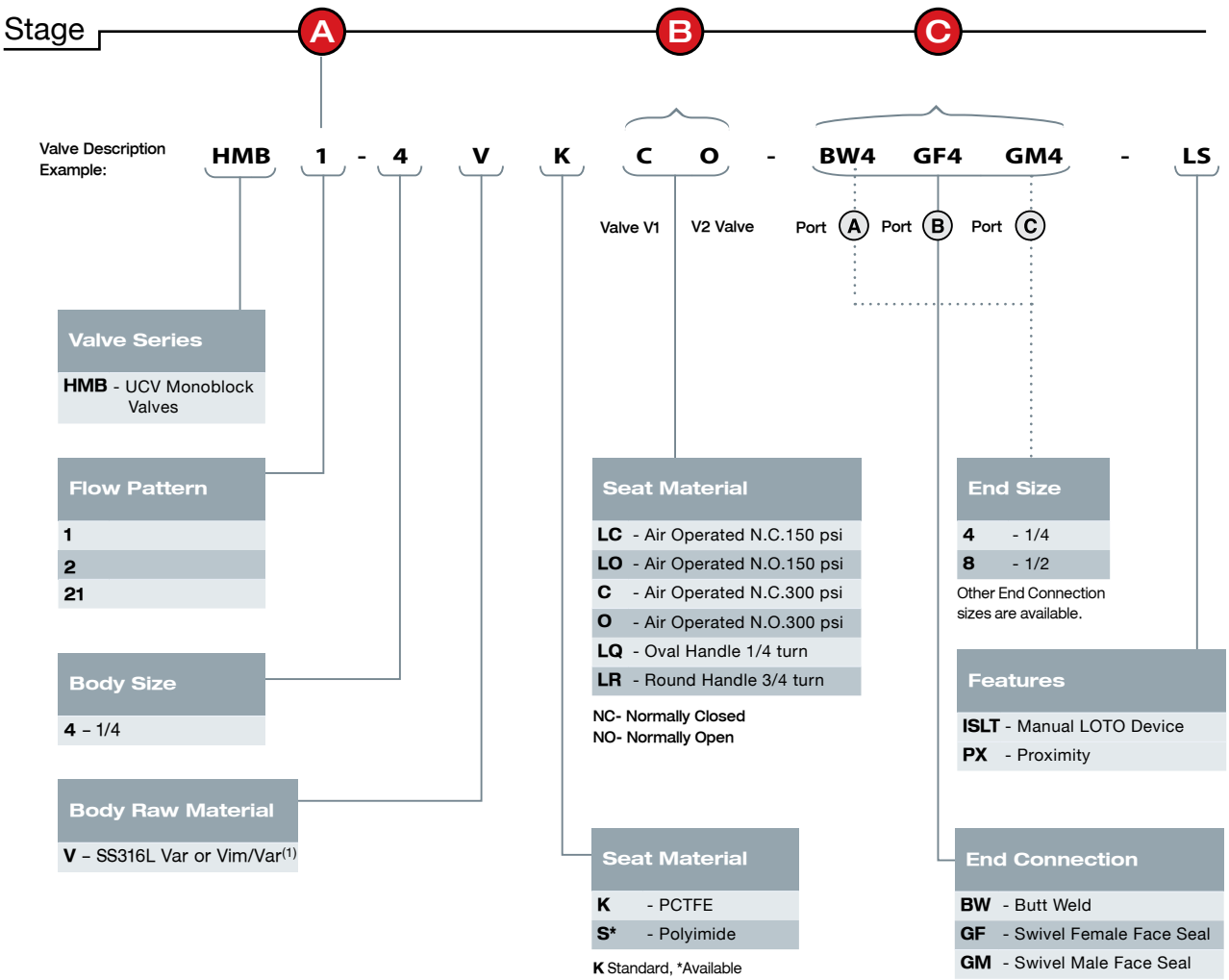




*Can also be used for reversed flow

(1) Per SEMI F20-0305

ORDERING INFORMATION



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.

Metal Diaphragm Valves

Standard models from the Ultra Clean Valve Series made according to UHP specifications.
These models come with a connection joint 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	Pressure	Temp.	Cv	Leak Rates	
				Inboard	Across Seat
E 1/4	1MPa	-10 60°c	0.1	3 X 10^{-12} Pa m^3/sec Helium	3 X 10^{-10} Pa m^3/sec Helium
D 3/8	16.2MPa		0.3		
H 1/2			0.1		

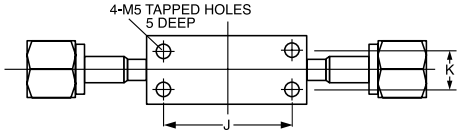
STRUCTURE

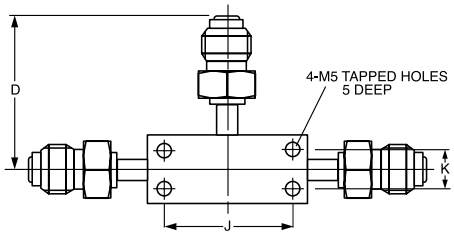
Item No.	Parts	Material
1	Body	316L Stainless Steel
2	Seat	PCTFE
3	Seat Holder	316L Stainless Steel
4	Diaphragm	Ni-Co Alloy
5	Handle/Act	Aluminum

ORDERING INFORMATION

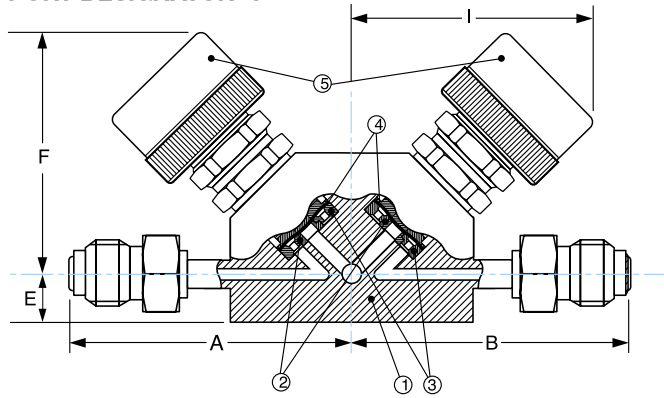
2B H V 4 C - MV

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	

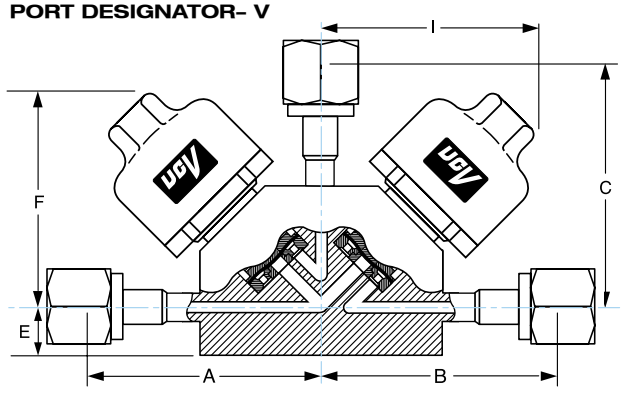




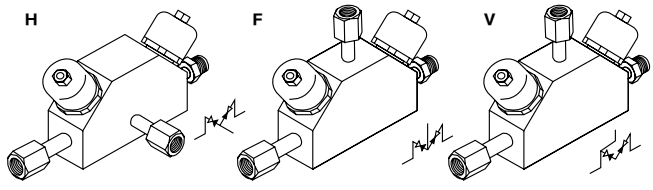
PORT DESIGNATOR– F



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.

UCV HMB, Rev.05, January 2014