

HIGH PRESSURE

UGV[®]



- 2LH** - HIGH PRESSURE
- 3LH** - HIGH PRESSURE METAL SEAT
- EVH** - HIGH PURITY GRADE, HIGH PRESSURE
- 2LS** - HIGH PRESSURE, HIGH FLOW
- 3LS** - HIGH PRESSURE HIGH FLOW METAL SEAT
- HP** - ULTRA HIGH PURITY HIGH-PRESSURE VALVE



2LH SERIES HIGH-PRESSURE

Metal Diaphragm Valves

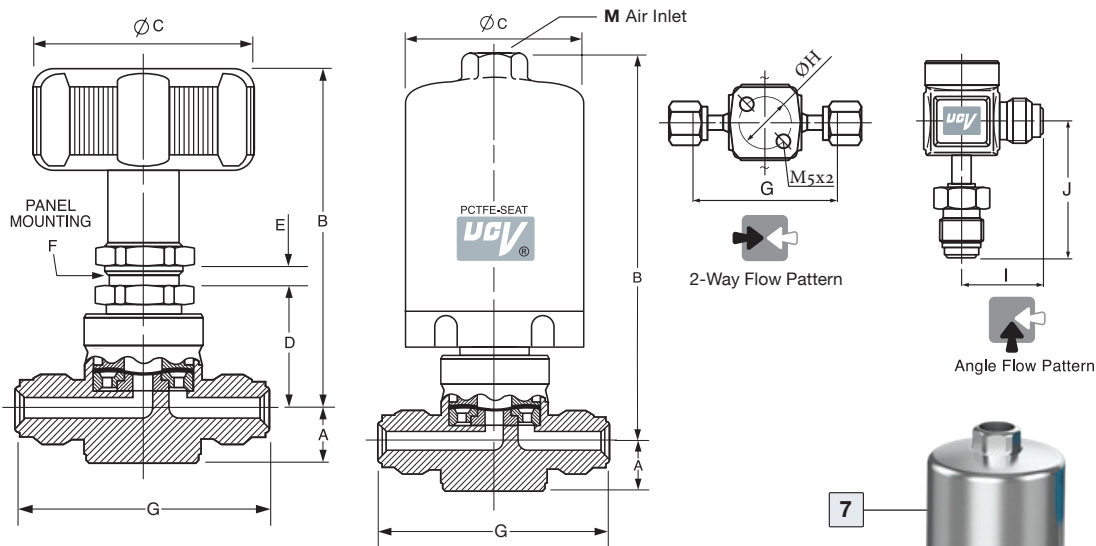
High-pressure standard models from the Ultra-Clean Valve Series are made according to UHP specifications. These models come with end connections in 1/4", as a standard. Features include a compact design and a highly reliable seat structure.

- Can be used as shut-off valves for high-pressure fluids at up to 15.9 MPa/2300 psi.
- Compact designs for minimum footprint.
- Electropolished surfaces
- Optionally ready for 21 MPa/3060 psi (*For 3060 psi, add "-210K" to the valve description).
- Forged body



STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E	F	G	H	I	J	M
2LHS4R-W	1/4	Extended Butt Weld	11	(68)	45	25	(2.5)		47	17			
2LHS4R-BW	1/4	Short Butt Weld	11	(68)	45	25	(2.5)		44.4	17			
2LHA4R-BV	1/4	Male HTC®	11	(68)	45		(2.5)			17	26	45	
2LHS4C-FV	1/4	Swivel Female HTC®	11	(85)	40	25		26	66	17			1/8"



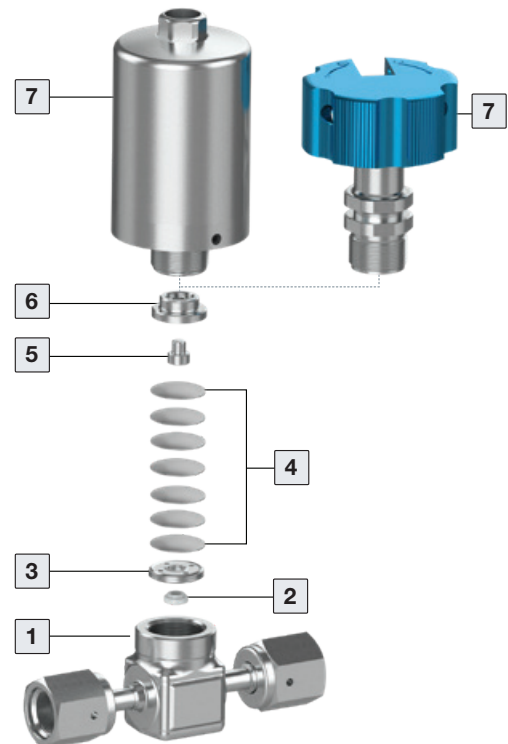
SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	21MPa/ (3060 psi) option: 15.9MPa (2300 psi)	63.5MPa (9200 psi)	24MPa (3450 psi)	-10 to 60°C (PCTFE) -10 to 150°C (PI)	0.1	3X10 ⁻¹² pa•m³/sec Helium	3X10 ⁻¹⁰ pa•m³/sec Helium

STRUCTURE

Item No.	Parts	Material
1	Body	Stainless steel, 316L Var or Vim/Var (1)
2	Seat	PCTFE/PI (Polyimide)
3	Seat Holder	Stainless steel, 316L Var or Vim/Var (1)
4	Diaphragm	Co-Cr-Ni Alloy
5	Act. Button	304 Stainless Steel
6	Act. Button Holder	Stainless Steel, ASTM 630 H900
7	Actuation Device	Aluminum

(1) Per SEMI F20-0305



3LH SERIES HIGH-PRESSURE METAL SEAT

Metal Diaphragm Valves

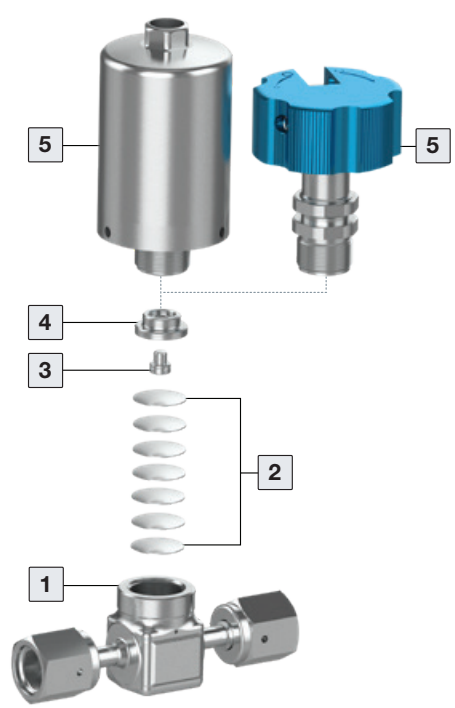
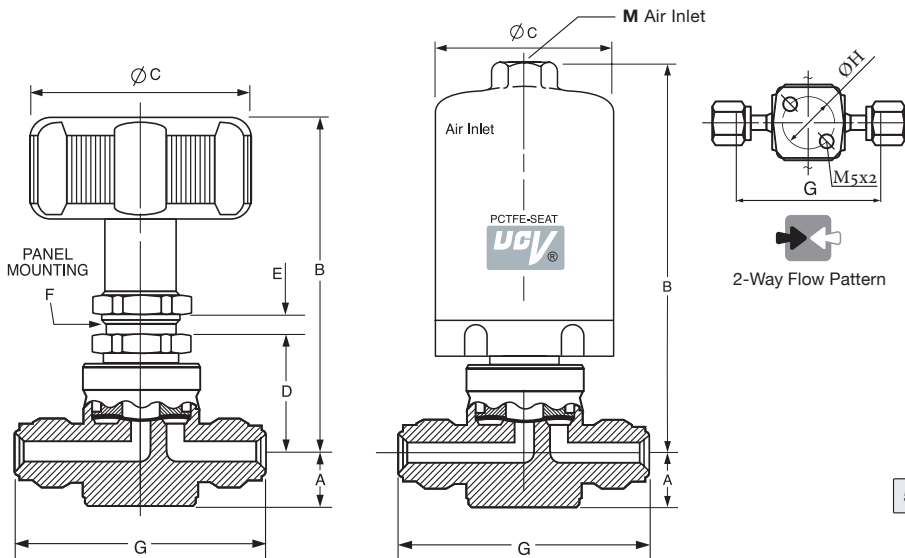
The highest-ranking grade of high-pressure models from the Ultra-Clean Valve Series are made according to UHP specifications. It is the ultimate in metallic diaphragm-operated valves with resins completely removed from their gas-contact areas. It can be used to supply corrosive gases (such as HCl and F2) at high pressures.

- Can be used as shutoff valves for high-pressure fluids at up to 15.9 MPa/2300 psi.
- Compact designs for minimum footprint.
- Electropolished surfaces
- Optionally ready for 21 MPa/3060 psi (*For 3060 psi, add "-210K" to the valve description).



STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E	F	G	H	J
3LHS2R-BV	1/8	Male HTC®	8	(67)	43	23	(2.5)	16	41	15	
3LHS4R-W	1/4	Extended Butt Weld	11	(68)	45	25	(2.5)	17	47	17	
3LHS4R-BW	1/4	Short Butt Weld	11	(68)	45	25	(2.5)	17	44.4	17	
3LHS4C-FV	1/4	Swivel Female HTC®	11	(85)	40				66	17	1/8"



SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	15.9MPa (2300 psi) OPTION: 21MPa/ (3060 psi)	83MPa (12000 psi)	31MPa (4500 psi)	-10 to 150°C	0.1	3X10 ⁻¹² pa•m ³ /sec Helium	3X10 ⁻¹⁰ pa•m ³ /sec Helium

STRUCTURE

Item No.	Parts	Material
1	Body	Stainless steel, 316L Var or Vim/Var ⁽¹⁾
2	Diaphragm	Co-Cr-Ni Alloy
3	Act. Button	304 Stainless Steel
4	Act. Button Holder	Stainless Steel, ASTM 630 H900
5	Actuation Device	Aluminum

⁽¹⁾ Per SEMI F20-0305

EVH SERIES HP-GRADE, HIGH-PRESSURE VALVE

Metal Diaphragm Valves

High-pressure standard models from the Ultra-Clean Valve Series are made according to HP specifications.

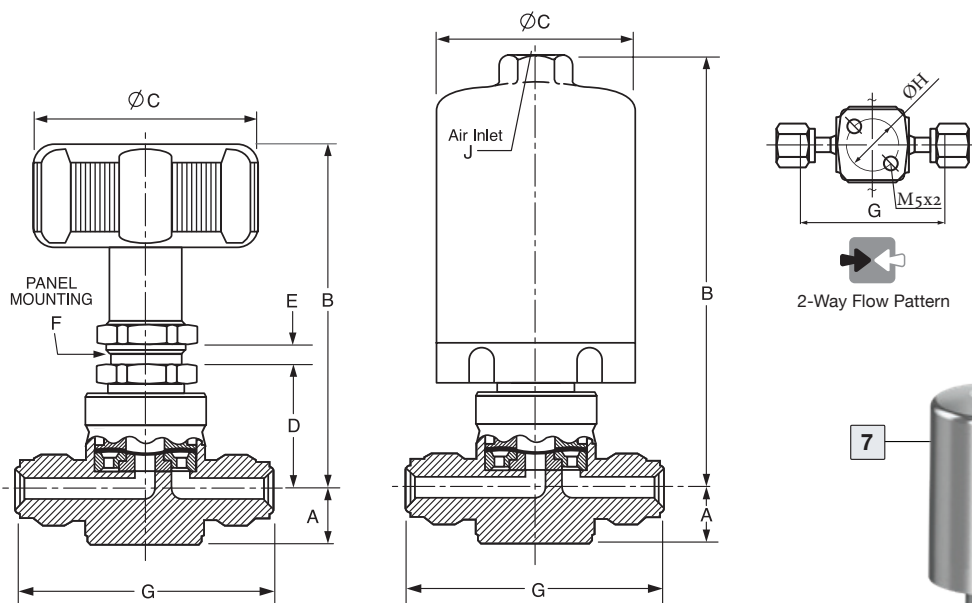
- Can be used as shutoff valves for high-pressure fluids at up to 20.6 MPa/3060 psi*.
- Compact designs for minimum footprint.
- Electropolish surfaces as an option ("-EP").
- Forged body

*For 3060 psi, add "-210K" to the valve description



STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E	F	G	H	J
EVH4-BI	1/4	LET-LOK®	11	(68)	45	25	(2.5)	17	(63.5)	17	
EVH4-V	1/4	Male HTC®	11	(68)	45	25	(2.5)	17	52	17	
EVH4C-FV	1/4	Swivel Female HTC®	11	(85)	40				66	17	1/8"

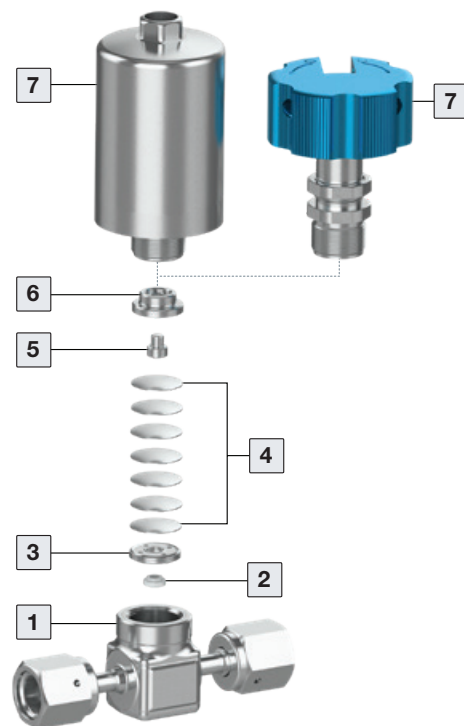


SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	15.9MPa (2300 psi) OPTION: 21MPa/ (3060 psi)	63.5MPa (9200 psi)	24MPa (3450 psi)	-10 to 60°C (PCTFE) -10 to 150°C (PI)	0.1	3X10 ⁻¹² pa•m ³ /sec Helium	3X10 ⁻¹⁰ pa•m ³ /sec Helium

STRUCTURE

Item No.	Parts	Material
1	Body	316L Stainless Steel
2	Seat	PCTFE/PI (Polyimide)
3	Seat Holder	316L Stainless Steel
4	Diaphragm	Co-Cr-Ni Alloy
5	Act. Button	304 Stainless Steel
6	Act. Button Holder	Stainless Steel, ASTM 630 H900
7	Actuation Device	Aluminum



2LS SERIES HIGH-PRESSURE - HIGH-FLOW

Metal Diaphragm Valves

High-Pressure High-Flow models from the Ultra-Clean Valve Series are made according to UHP specifications. These models come with end connections in two sizes, 1/4" and 1/2", as a standard. With their compact designs, these valves comfortably fit into High-Pressure High-Flow applications.

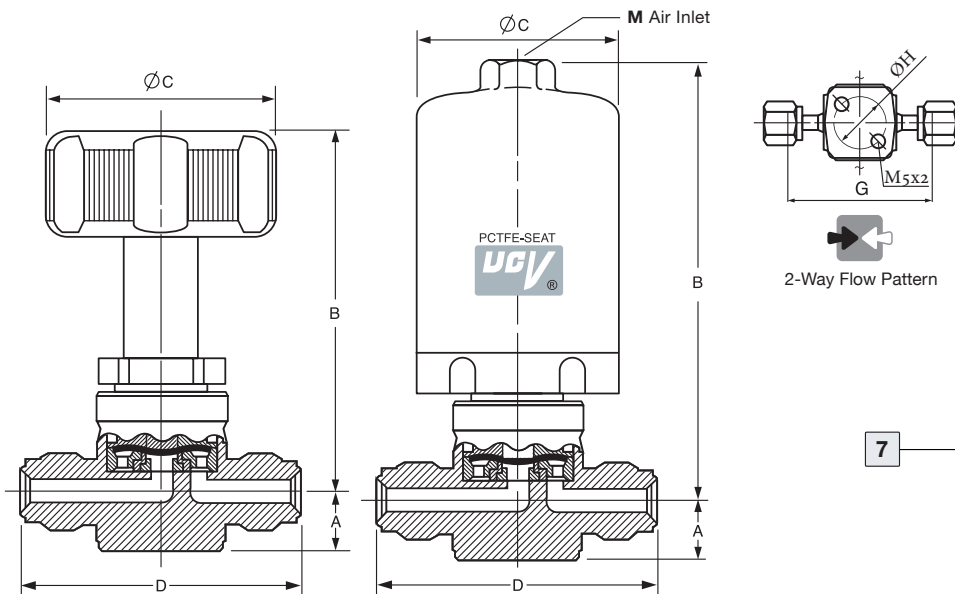
- Can be used as shutoff valves for high-pressure fluids at up to 21 MPa/3060 psi.
- Electropolished surfaces
- Forged body

For more information, please contact one of our field representatives.



STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E	H	J
2LSS4C-BW	1/4	Short Butt Weld	11	(89)	40	44.4		25	1/8"
2LSS4C-FV	1/4	Swivel Female HTC®	11	(89)	40	70.6		25	1/8"
2LSS8C-W	1/2	Extended Butt Weld	17.5	(92.5)	40	105		28	1/8"
2LSS8C-BW	1/2	Short Butt Weld	17.5	(92.5)	40	55		28	1/8"



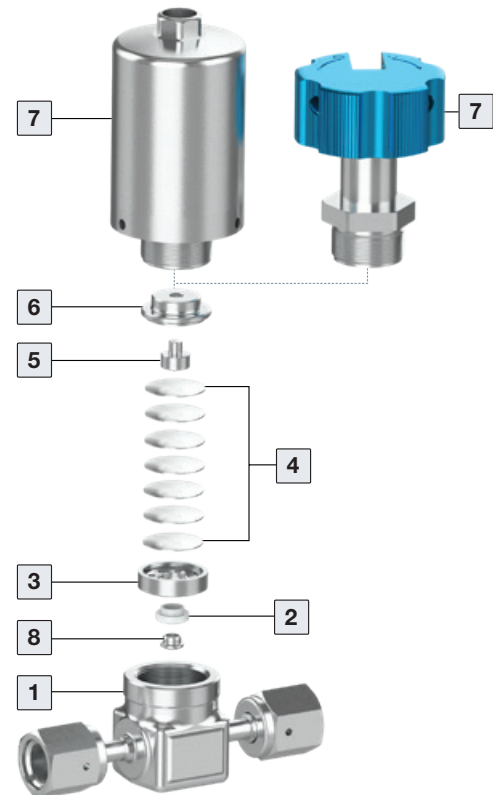
SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	63.MPa / (3060 psi)	63.5MPa (9200 psi)	24MPa (3450 psi)	-10 to 40°C (PCTFE) -10 to 150°C (PI)	0.25	3X10 ⁻¹² pa•m ³ /sec Helium	3X10 ⁻¹⁰ pa•m ³ /sec Helium
1/2					0.27		

STRUCTURE

Item No.	Parts	Material
1	Body	Stainless steel, 316L Var or Vim/Var (1)
2	Seat	PCTFE/PI (Polyimide)
3	Seat Holder	Stainless steel, 316L Var or Vim/Var (1)
4	Diaphragm	Co-Cr-Ni Alloy
5	Act. Button	304 Stainless Steel
6	Act. Button Holder	Stainless Steel, ASTM 630 H900
7	Actuation Device	Aluminum
8	Seat Retainer	Stainless steel, 316L Var or Vim/Var (1)

(1) Per SEMI F20-0305



3LS SERIES HIGH-PRESSURE-HIGH-FLOW METAL SEAT

Metal Diaphragm Valves

The highest-ranking grade of high-pressure-high-flow models from the Ultra-Clean Valve Series are made according to UHP specifications. It is the ultimate in metallic diaphragm-operated valves with resins completely removed from their gas-contact areas. With their compact designs, these valves comfortably fit into high-pressure high-flow applications.

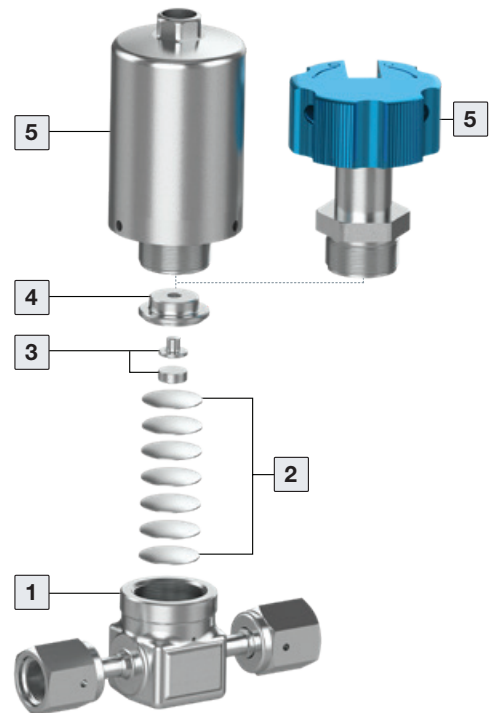
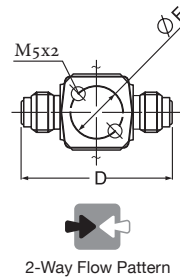
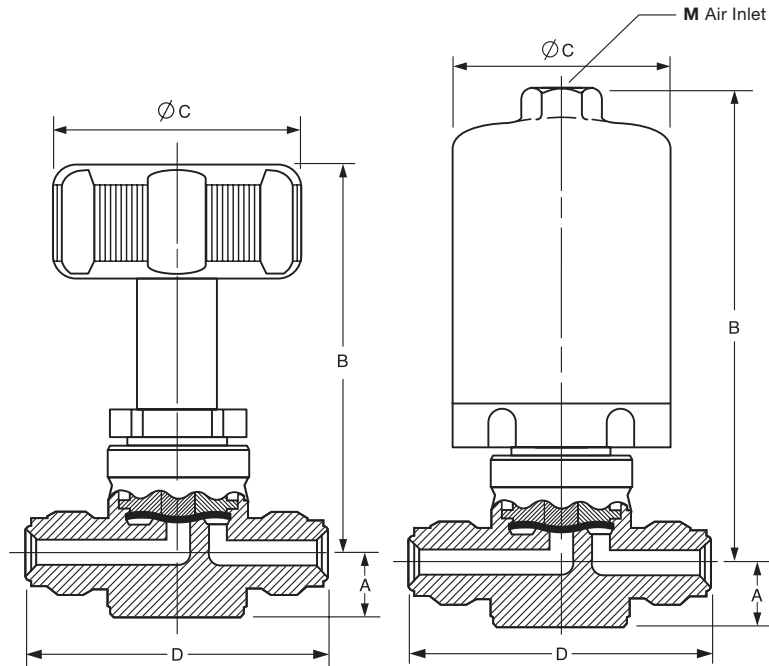
- Can be used as shutoff valves for high-pressure fluids at up to 21 MPa/3060 psi.
- Compact designs for minimum footprint.
- Extensive records of proven performance on corrosive gases (such as HCl and F2).
- Electropolished surfaces

For more information, please contact one of our field representatives.



STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	F	G	H
3LSS4R-W	1/4	Extended Butt Weld	11	(71)	45	89	25	M5	
3LSS4R-BW	1/4	Butt Weld	11	(71)	45	44.4	25	M5	
3LSS4C-FV	1/4	Swivel Female HTC®	11	(89)	40	70.6	25	M5	1/8"
3LSS4C-BV	1/4	Swivel female HTC	11	(89)	40	58	25	M5	1/8"



SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	21MPa / (3060 psi)	83MPa (12000 psi)	31MPa (4500 psi)	-10 to 150°C	0.25	3 X 10 ⁻¹² Pa m ³ /sec Helium	7 X 10 ⁻¹⁰ Pa m ³ /sec Helium
1/2							

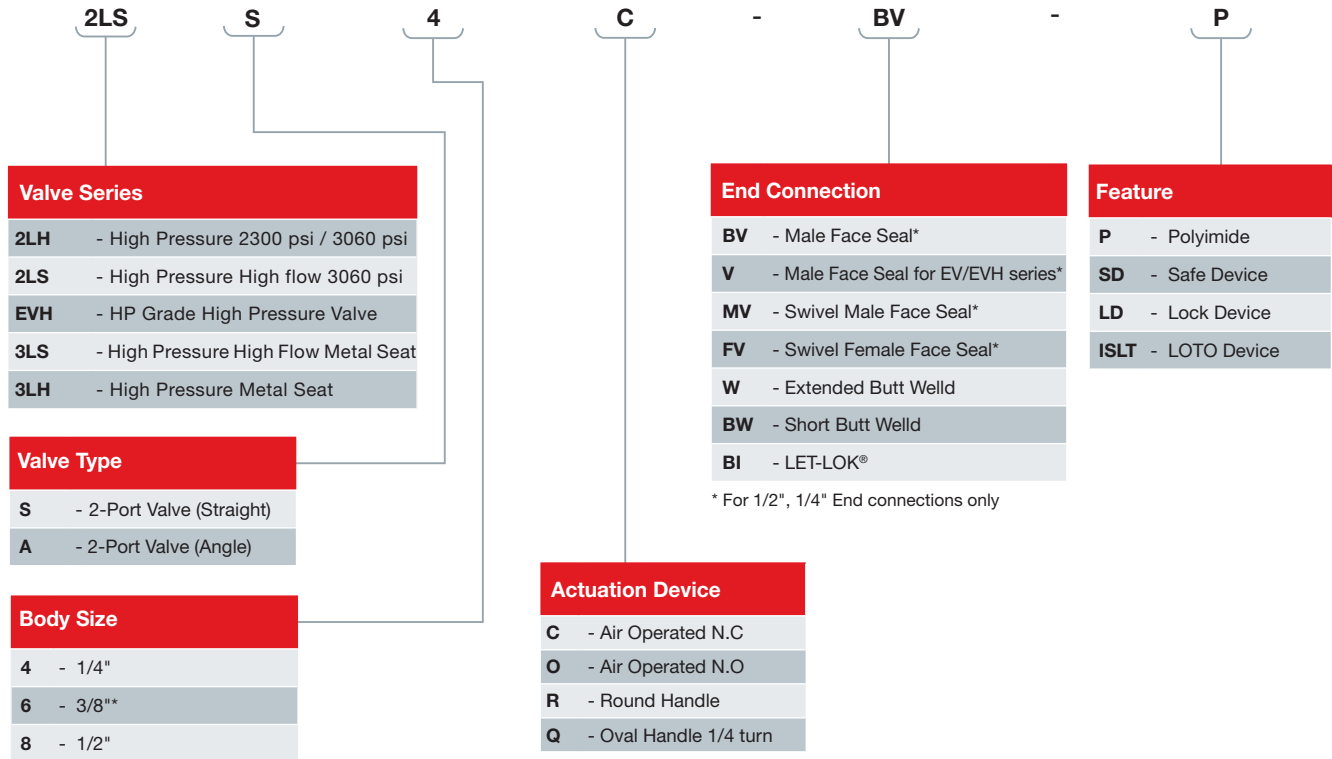
STRUCTURE

Item No.	Parts	Material
1	Body	Stainless steel, 316L Var or Vim/Var (1)
2	Diaphragm	Co-Cr-Ni Alloy
3	Act. Botton Set	304 Stainless Steel
4	Act. Botton Holder	Stainless Steel, ASTM 630 H900
5	Actuation Device	Aluminum

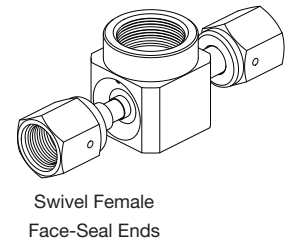
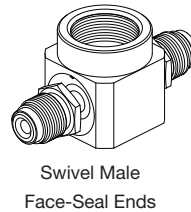
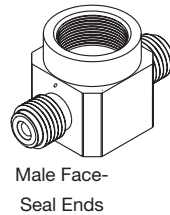
¹⁾ Per SEMI F20-0305

ORDERING INFORMATION - HIGH PRESSURE

Valve Description Example:



Blue Handle is standard.
For other colors contact your local HAM-LET representative.



■ Standard seat: PCTFE.

For your convenience, port conversion of old HMJ valves to current HM series:
A = 30 | B = 35 | C = 34 | D = 31 | E = 32 | F = 33

Warning! For your safety

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.

HP SERIES HIGH PRESSURE DIAPHRAGM VALVES



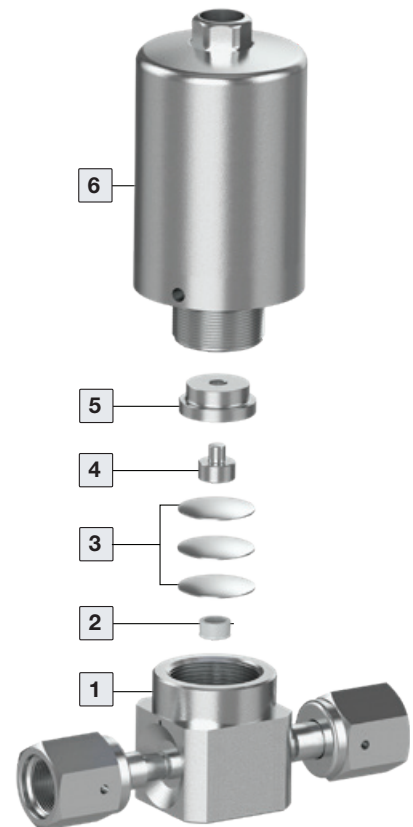
HP20 SERIES SPECIFICATIONS

Structure	Direct-seal metal-diaphragm valve manually & pneumatic operated
Pressure	Vacuum to 21MPa (3060 psi)
Burst Pressure	Vacuum to 83MPa (12000 psi)
Proof Pressure	Vacuum to 31MPa (4500 psi)
Temperature	14 to 104°F, -10 to 60°C (PTFE Seat), 14 to 302°F, -10°C to 150°C (Polyimide seat)
Leakage: Inboard Leakage	Less Than 3x10 ⁻¹¹ atm cc He/sec
Across the seat	Less Than 1x10 ⁻⁹ atm cc He/sec
Operated	Manual : Lever 1/4 turn Pneumatic : NC/NO
End Connections	Swivel Female Face-Seal, Male Face Seal, Swivel Male Face Seal, Buttweld, Let-Lok
CV Value	0.27
Direction	2 port straight, 2 port L, 3 port, 4 port
Surface Finish Ra (Ave)-Standard	5µin
Air Supply	70-90psig, 5-6bar
Air Connection	BSPT 1/8" (NPT 1/8" as an option)

STRUCTURE

Item No.	Part No.	Material
1	Body	**Stainless steel, 316L Var or Vim/Var ⁽¹⁾
2	Seat	**PTFE, Polyimide
3	Diaphragm	Co-Cr-Ni Alloy
4	Act. Button	Stainless steel, AISI 304, ball AISI 440C
5	Act. Button Holder	Stainless steel, ASTM 630 H900
6	Handle & Stem Assembly	A6061T6, ASTM 630 H900

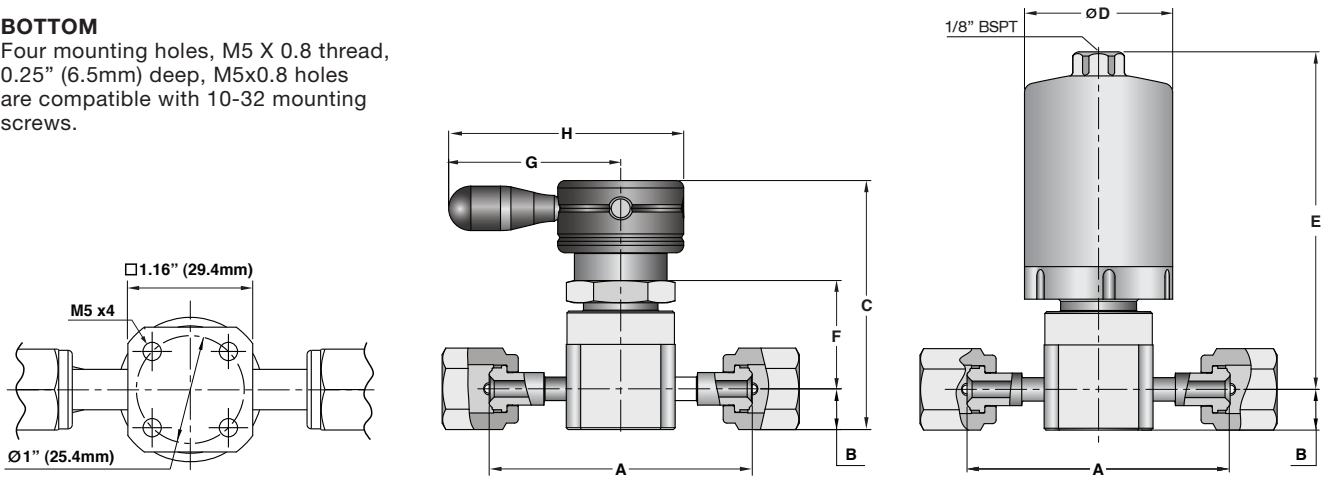
⁽¹⁾ Per SEMI F20-0305



STANDARD CONFIGURATION DIMENSIONS: MANUAL HANDLE & PNEUMATIC, NC/NO

BOTTOM

Four mounting holes, M5 X 0.8 thread, 0.25" (6.5mm) deep, M5x0.8 holes are compatible with 10-32 mounting screws.



End Connections	Description	A	B	C	D	E	F	G	H
		mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
Swivel Female Face-Seal	HP20-4VKHL-GF4	70.6 (2.78)	11 (0.43)	67.2 (2.65)	40 (1.57)	90 (3.54)	29.2 (1.15)	46.5 (1.83)	63.5 (2.5)
	HP20-4VKHC-GF4								
	HP20-4VKHO-GF4								
Male Face-Seal	HP20-4VKHL-M4	58.4 (2.3)							
	HP20-4VKHC-M4								
	HP20-4VKHO-M4								
Swivel Male Face-Seal	HP20-4VKHL-GM4	70.6 (2.78)							
	HP20-4VKHC-GM4								
	HP20-4VKHO-GM4								
Buttweld	HP-20-4VKHL-BW4	44.4 (1.75)							
	HP20-4VKHC-BW4								
	HP20-4VKHO-BW4								

ORDERING INFORMATION HP SERIES

VALVE DESCRIPTION EXAMPLE:

HP 2 1 - 4 V K HL - BW 4 GF 4

Port (A) Port (B)

Valve Series	Port Designator*	Body Material	Actuation Device	End Size
HP - High Pressure	0, 1, 2, 3, 4, 5 <small>* Port Designator per HM Series in the catalog</small>	V- SS316L Var or Vim/Var ⁽¹⁾ (Bar Stock)	HL - Blue Lever Handle HC - Air Operated N.C. 3060 psi HO - Air Operated N.O. 3060 psi NC-Normally Closed, NO-Normally Open	4 - 1/4" 6 - 3/8"* 8 - 1/2" 6 mm* 10 mm* 12 mm*
Valve Type	Body Size*	Seat Material	End Connection	
2 - 2-Port Valve	4 - 1/4	K - PCTFE	BW - Butt Weld	
3 - 3-Port Valve	*Note: Body size is 1/4" for all end sizes	S - Polyimide	GF - Swivel Female Face-Seal**	
4 - 4-Port Valve		F - PFA	GM - Swivel Male Face-Seal**	
			M - Male Face-Seal**	
			LL - Let-Lok	

* BW, LL End connections only

*For limit switch indicator on pneumatic Valve, contact your local HAM-LET representative.

** 1/4", 1/2" End connection size only

PORT DESIGNATOR - (TOP VIEW)

Valve Configuration	Port Designator	Schematic Flow Chart	Valve Configuration	Port Designator	Schematic Flow Chart	Valve Configuration	Port Designator	Schematic Flow Chart
2 Port Valve HP2	0		3 Port Valve HP3	0		4 Port Valve HP4	0	
	1 L-Port			1			1	
	2 L-Port			2			2	
				3			3	
				4				
				5				