

# ECOMONIC VALVES

**UCV**<sup>®</sup>



- HD** - ECONOMIC VALVE
- EV** - REPLACEABLE SEAT MODEL
- EVZ** - GENERAL PURPOSE



 **HAM-LET**<sup>®</sup>  
Group

# HD SERIES ECONOMIC VALVE

The HD series of manual and pneumatically operated diaphragm valves provides a cost-effective solution for low pressure applications up to 300 psi (20 bar).

This unique forged body diaphragm valve series was specifically designed to meet the pressure, finish and cleanliness requirements of Photo Voltaic panels and LED manufacturing as well as several Semiconductor applications.

The HD20 valve series is the latest addition to HAM-LET high quality and economic solutions.



## HD20 SERIES SPECIFICATIONS

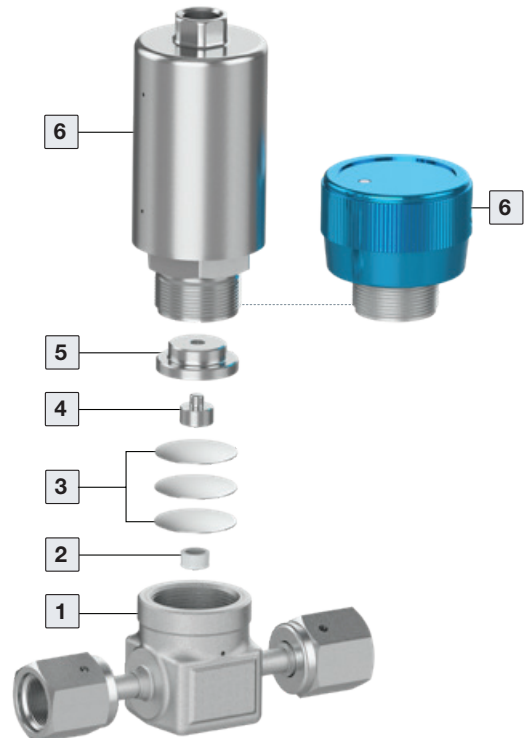
Structure	Direct-seal metal-diaphragm valve manually & pneumatic operated
<b>Pressure:</b> Manual Aluminum round handle ¼ turn	300 psi (20bar)
Air Operated	150 psi (10bar)
Air Operated	300 psi (20bar)
<b>Burst Pressure</b>	4500 psi (310 bar)
<b>Proof Pressure</b>	225 psi (15.5 bar)
<b>Temperature</b>	14 to 140°F, -10 to 60°C (PTFE Seat)
<b>Leakage:</b> Inboard Leakage	Less Than 3x10 <sup>-11</sup> atm cc He/sec
Across the seat	Less Than 1x10 <sup>-9</sup> atm cc He/sec
<b>End Connections</b>	Swivel Female Face-Seal, Male Face Seal, Swivel Male Face Seal, Butt weld, Let-Lok
<b>Cv value</b>	0.3
<b>Direction</b>	2 port straight
<b>Surface Finish Ra (Ave)-Standard</b>	10µin, No Electro Polish



Pneumatic 150 psi



Pneumatic 300 psi

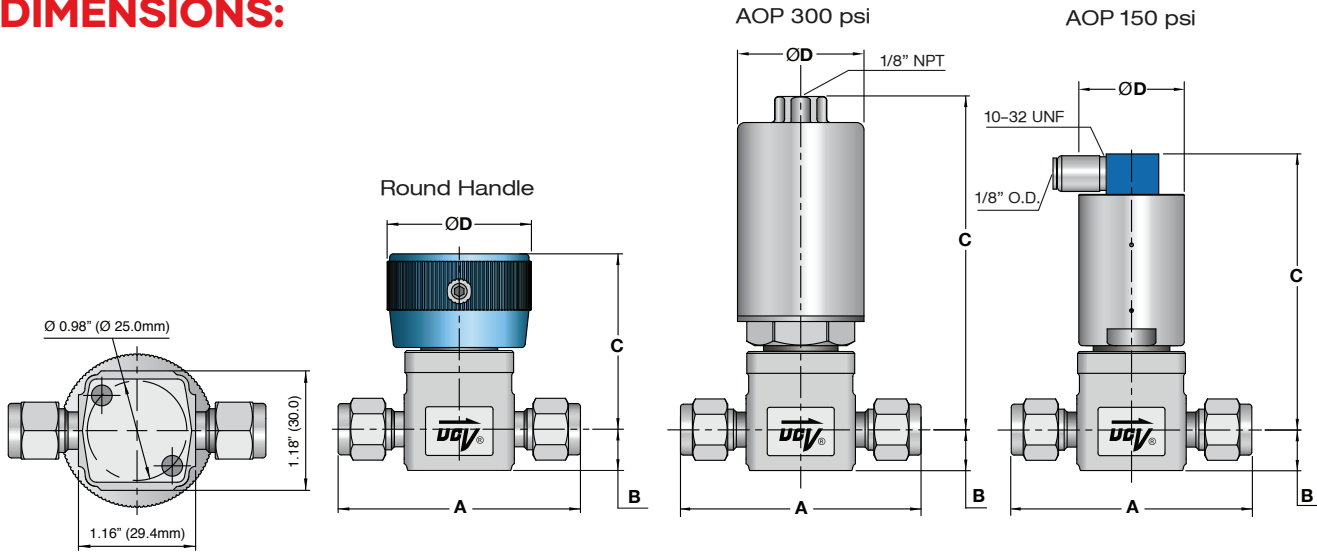


## STRUCTURE

Item No.	Part No.	Material
1	Body	Stainless steel, 316L Var or Vim/Var <sup>(1)</sup>
2	Seat	PCTFE, 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

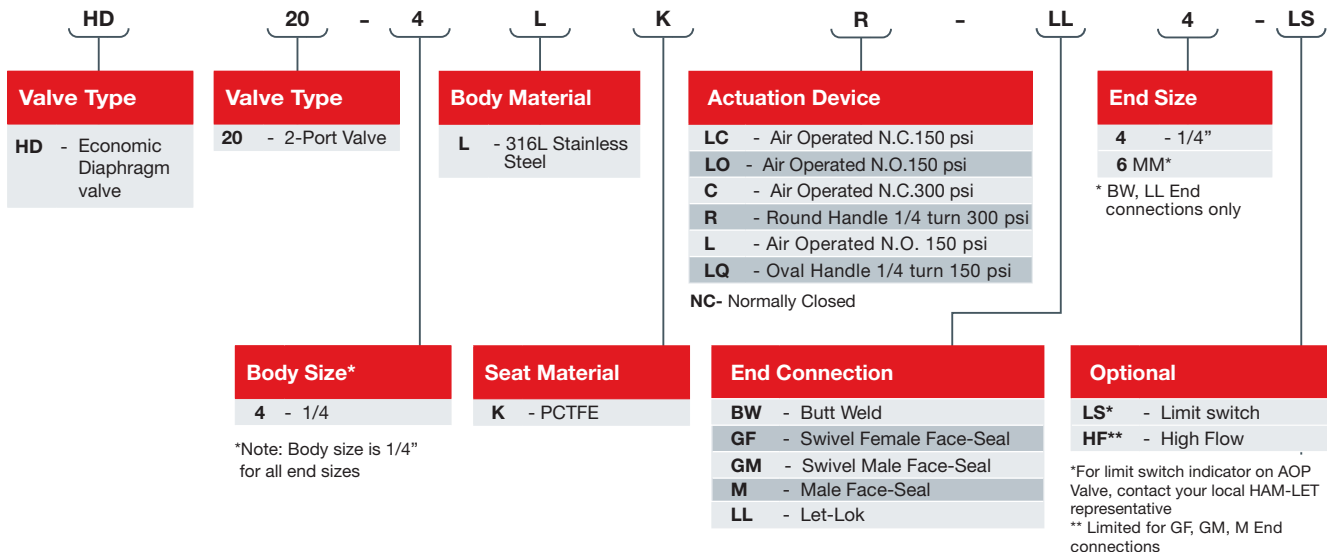
<sup>(1)</sup> Per SEMI F20-0305

# STANDARD CONFIGURATION DIMENSIONS:



End Connections	Description	A		B		C		D	
		mm	inch	mm	inch	mm	inch	mm	inch
Swivel Female Face-Seal	HD20-4LKR-GF4	70.6	2.78	11	0.43	46.8	1.84	38	1.5
	HD20-4LKLC-GF4					72.2	2.84	28.2	1.11
	HD20-4LKC-GF4					90	3.54	34	1.34
Swivel Male Face-Seal	HD20-4LKR-GM4	70.6	2.78			46.8	1.84	38	1.5
	HD20-4LKLC-GM4					72.2	2.84	28.2	1.11
	HD20-4LKC-GM4					90	3.54	34	1.34
Male Face-Seal	HD20-4LKR-M4	58	2.28			46.8	1.84	38	1.5
	HD20-4LKLC-M4					72.2	2.84	28.2	1.11
	HD20-4LKC-M4					90	3.54	34	1.34
Buttweld	HD20-4LKR-BW4	44.4	1.75			46.8	1.84	38	1.5
	HD20-4LKLC-BW4					72.2	2.84	28.2	1.11
	HD20-4LKC-BW4			90	3.54	34	1.34		
Let-Lok®	HD20-4LKR-LL4	64.7	2.55	46.8	1.84	38	1.5		
	HD20-4LKLC-LL4			72.2	2.84	28.2	1.11		
	HD20-4LKC-LL4			90	3.54	34	1.34		

## ORDERING INFORMATION HD SERIES



# EV SERIES REPLACEABLE SEAT MODEL

## Metal Diaphragm Valves

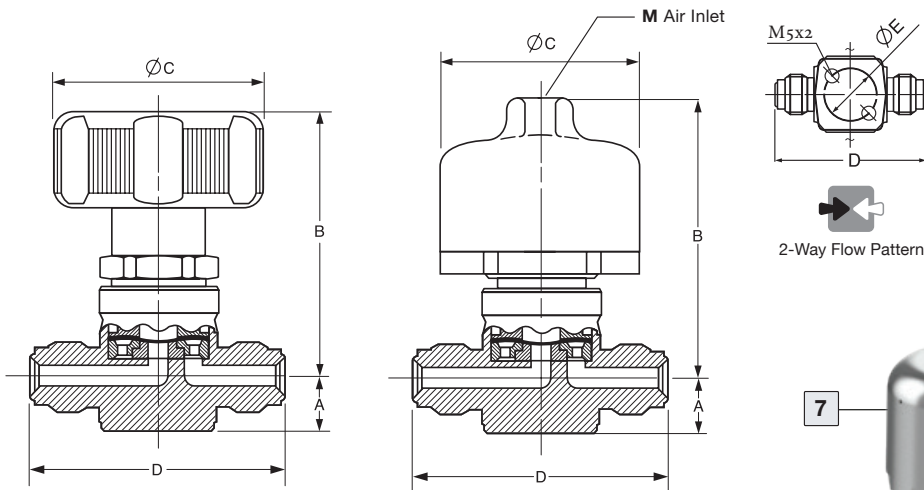
The EV Series is a family of standard models from the Ultra-Clean Valve Series, which are made according to HP specifications. These models come with end connections in three sizes, 1/4", 3/8" and 1/2", as a standard. These valves implement the traditional UCV 2LD series design concept of high reliability.

- Surface roughness of the gas contact area held to  $Ry \leq 2.5$  micro-meter as standard.
- Standard with a 240-degree rotary handle with an open/close indicator.
- Operable over a wide range of flow rates up to 1 MPa/150 psi.
- Electropolish surfaces as an option ("-EP").
- Forged body



## STANDARD CONFIGURATION DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E	G
EV4-I	1/4	LET-LOK®	11	(63)	45	(63.5)	25	
EV4C-FV	1/4	Swivel Female HTC®	11	(65)	46	70.6	25	1/8"
EV4-BV	1/4	Male HTC®	11	(63)	45	58	25	
EV6-I	3/8	LET-LOK®	17.5	(67.5)	45	(79.4)	28	
EV8-I	1/2	LET-LOK®	17.5	(67.5)	45	(86)	28	
EV8C-FV	1/2	Swivel Female HTC®	17.5	(73.5)	56	100	28	1/8"
EV8-BV	1/2	Male HTC®	17.5	(67.5)	45	76	28	

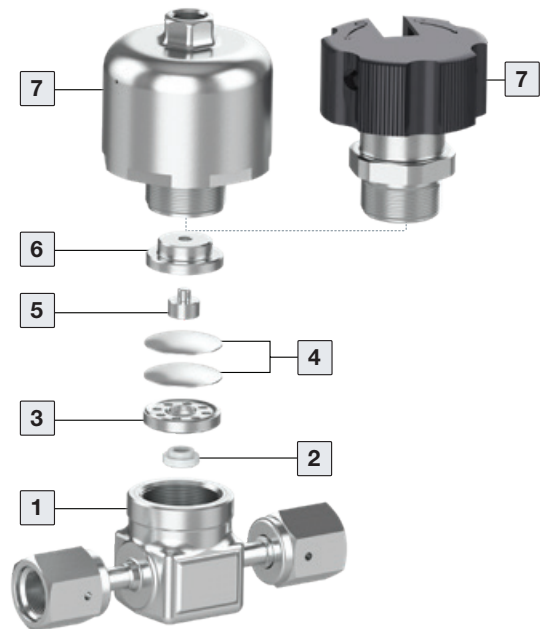


## SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	1MPa (150 psi)	31MPa (4500 psi)	1.5MPa (225 psi)	-10 to 60°C (PCTFE)	0.3	3 X 10 <sup>-12</sup> Pa m3/sec Helium	3 X 10 <sup>-10</sup> Pa m3/sec Helium
-10 to 150°C (PI)							
1/2							

## 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



# EVZ SERIES GENERAL PURPOSE

Metal Diaphragm Valves

Economic implementations of Ultra-Clean Valves.

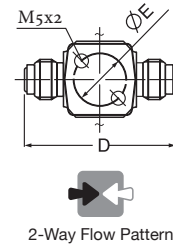
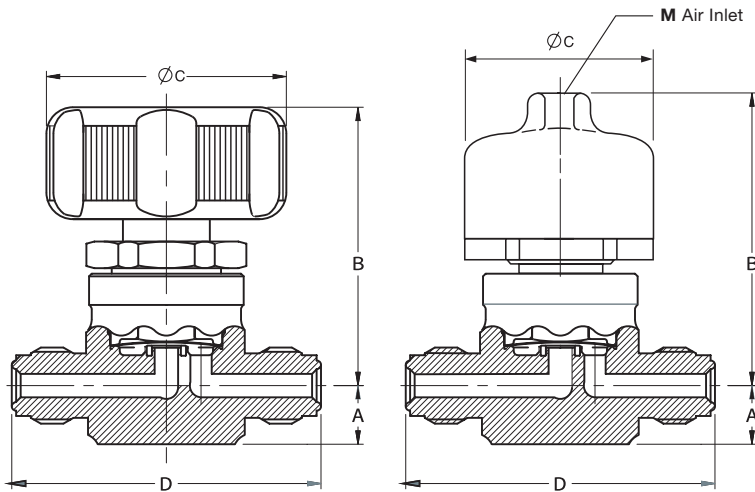
- Available in sizes from 1/4" to 1/2" to support a wide range of connections.
- Standard with a 240-degree rotary handle with an open/close indicator.
- Electropolish finish standard (LET-LOK® unpolished).
- Aluminum handle for compact, lightweight geometry.
- Forged body



The open/close indicator works on a follow-up basis. When opening or closing the valve, operate the handle until the handle hits the stopper.

## PART NUMBER / DIMENSIONS - mm

Part Number/ep	Size	End Connection	A	B	C	D	E
EVZS4R-BV	1/4	Male HTC®	11	(53)	45	58	25
EVZS4R-FV	1/4	Swivel Female HTC®	11	(53)	45	70.6	25
EVZS4R-BI	1/4	LET-LOK®	11	(53)	45	(63.5)	25
EVZS6R-BI	3/8	LET-LOK®	17.5	(58)	45	(79.5)	28
EVZS8R-BV	1/2	Male HTC®	17.5	(58)	45	76	28
EVZS8R-FV	1/2	Swivel Female HTC®	17.5	(58)	45	100	28
EVZS8R-BI	1/2	LET-LOK®	17.5	(58)	45	(86)	28

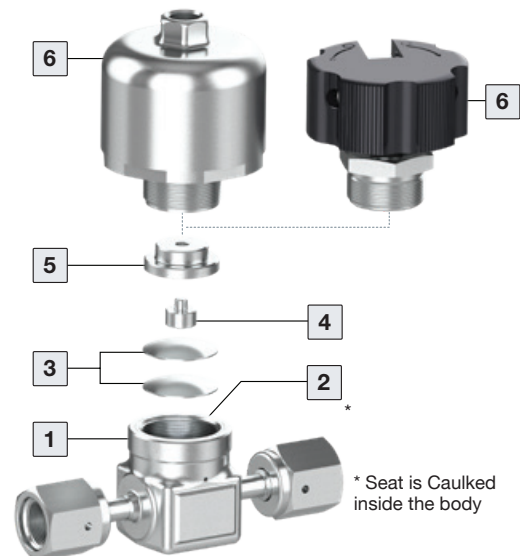


## SPECIFICATIONS

Size	Design Pressure	Burst pressure	Proof pressure	Temp.	Cv	Leak Rates	
						Inboard	Across Seat
1/4	1MPa (150 psi)	31MPa (4500 psi)	1.5MPa (225 psi)	-10 to 80°C	0.27	3X10 <sup>-12</sup> pa•m <sup>3</sup> /sec Helium	3X10 <sup>-10</sup> pa•m <sup>3</sup> /sec Helium
3/8							
1/2							

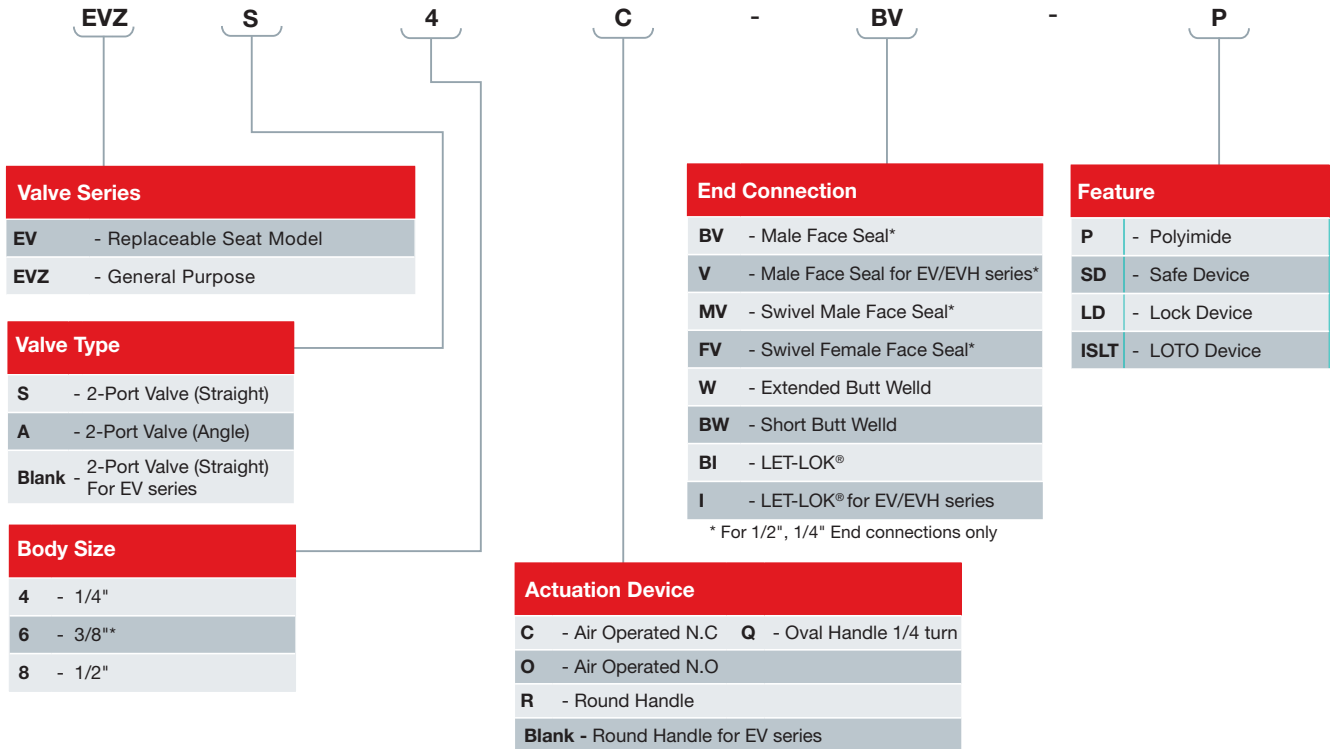
## STRUCTURE

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

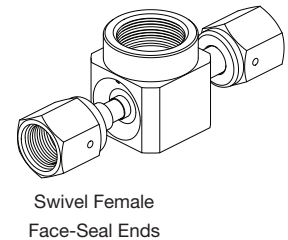
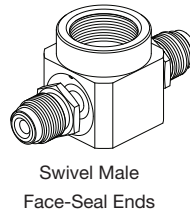
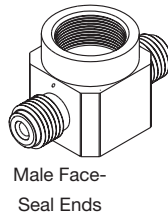


# ORDERING INFORMATION - COST EFFICIENT

Valve Description Example:



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



- Standard seat: PCTFE.
- For valves that are made of bar stock

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.