



# HAM-LET SURFACE MOUNT SERIES



- ✓ Compact
- ✓ Up to 150 psi
- ✓ Suitable for C-seal

- HMS** - STANDARD SERIES
- HMSC** - COMPACT SERIES
- HCS** - HIGH LIFE CYCLE SERIES
- HYPS** - HYBRID PRO
- 2LN** - HYBRID VALVE



## HMS SERIES

### STANDARD SERIES

The Ultra Clean Valves Series offer a surface mount body design. The surface mount design complies with SEMI PR 3.1 for 1.125" and 1.500" c-seal. HMS Series is manufactured according to UHP specifications of SEMI F-20 with manual and pneumatic operating mechanisms.



### UCV SPECIFICATIONS

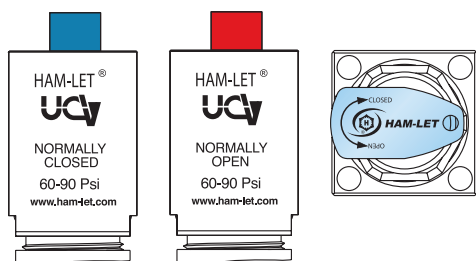
Structure	Direct-seal, metal-diaphragm valve without seal packing, manually and pneumatically operated
Design pressure	Vacuum to 1MPa (150 psi)
Burst pressure	31MPa (4500 psi)
Proof pressure	1.5MPa (225 psi)
Operating temperature: Standard	14 to 140°F, -10 to 60°C (PTFE seat)
Available	14 to 302°F, -10 to 150°C (Polyimide seat)
Leakage: Inboard leakage	$\leq 3 \times 10^{-11}$ atm cc He/sec
Across the seat	$\leq 1 \times 10^{-9}$ atm cc He/sec
Particle	No particles detected above 0.1µm.
Cv value	0.3 – for 1/4", 0.7 – for 1/2"
Surface finish Ra (Ave)-standard	5µin
Actuator air supply (pneumatic)	60-90 psig , 4 - 6 bar
Air connection (pneumatic)	1/8" tube fitting with 10-32 UNF thread

### MATERIALS OF CONSTRUCTION

Item No.	Part No.	Material
1	Body	SST, 316L Var or Vim/Var <sup>1</sup>
2	Seat	PCTFE, Polyimide
3	Seat holder	SST, 316L Var or Vim/Var <sup>1</sup>
4	Diaphragm	Co-Cr-Ni alloy
5	Actuation device	Manual A6061T6
		Pneumatic A6061T6

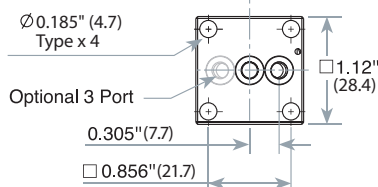
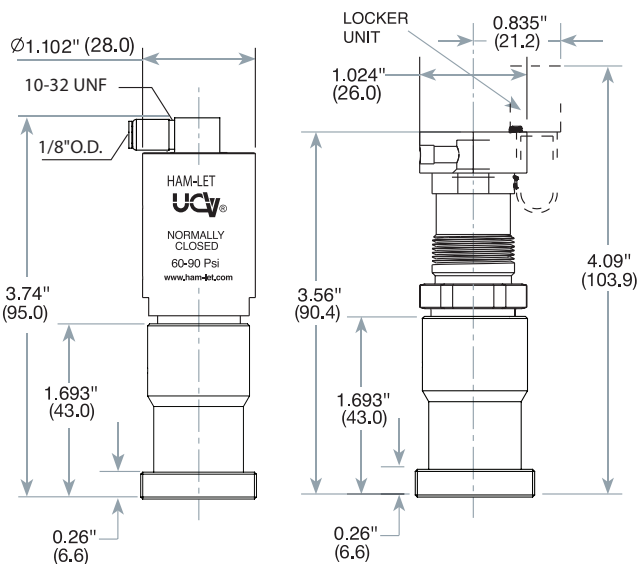
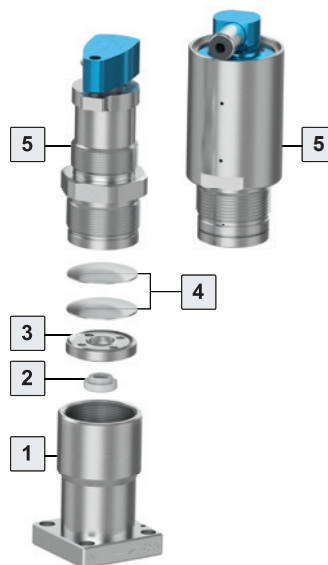
<sup>1</sup>Per SEMI F20-0305

### ACTUATION DEVICE - MARKING



#### 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.



- The dimensions apply to pneumatic and manual valves
- Dimensions for reference only and are subject to change

## HMSC

### COMPACT SERIES

The Ultra-Clean Valve Series offers a surface mount body design. The surface mount design complies with SEMI PR 3.1 for 1.125" C-seal. This valve is a low-profile body design with an Integral Safety Lockout Tag-out (ISLT) handle.

### UCV SPECIFICATIONS

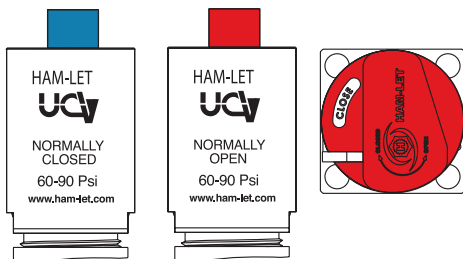
Structure	Direct-seal, metal-diaphragm valve without seal packing, manually and pneumatically operated
Design pressure	Vacuum to 1MPa (150 psi)
Burst pressure	31MPa (4500 psi)
Proof pressure	1.5MPa (225 psi)
Operating temperature: Standard	14 to 140°F, -10 to 60°C (PCTFE seat)
Available	14 to 302°F, -10 to 150°C *(Polyimide seat)
Leakage: Inboard leakage	$\leq 3 \times 10^{-11}$ atm cc He/sec
Across the seat	$\leq 1 \times 10^{-9}$ atm cc He/sec
Particle	No particles detected above 0.1µm.
Cv value	0.3
Surface finish Ra (Ave)-standard	5µin
Actuator air supply (pneumatic)	60-90 psig, 4 - 6 bar
Air connection (pneumatic)	1/8" tube fitting with 10-32 UNF thread

### MATERIALS OF CONSTRUCTION

Item No.	Part No.	Material
1	Body	SST, 316L Var or Vim/Var <sup>1</sup>
2	Seat	PCTFE, Polyimide
3	Diaphragm	Co-Cr-Ni alloy
4	Act. button	304 SST
5	Act. button holder	SST, ASTM 630 H900
6	Actuation device	Manual A6061T6 Pneumatic A6061T6

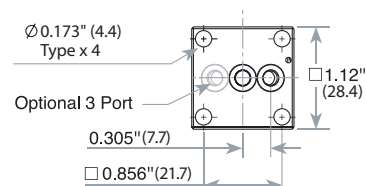
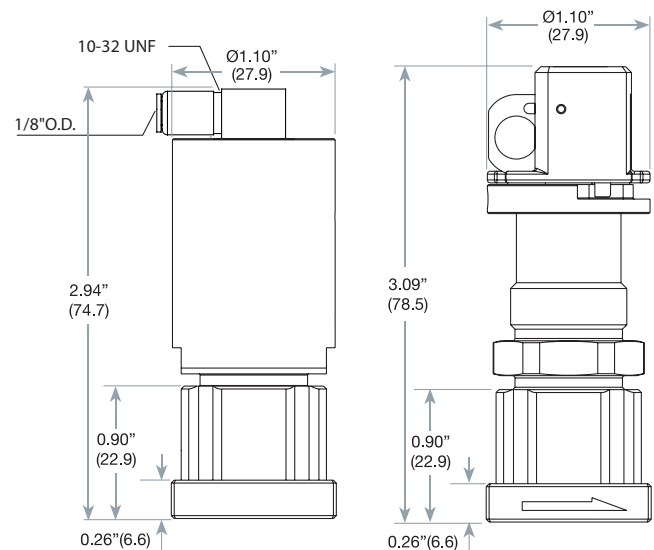
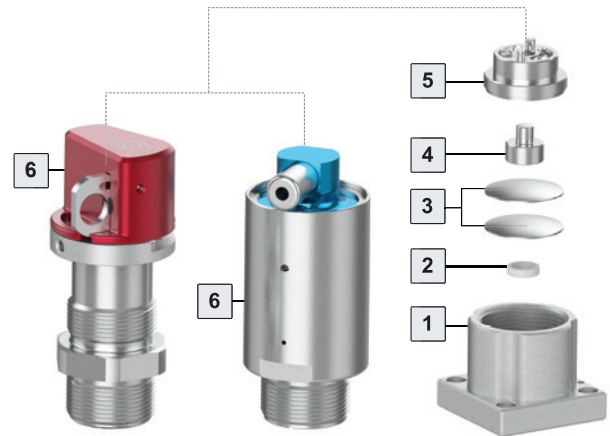
<sup>1</sup>Per SEMI F20-0305

### ACTUATION DEVICE - MARKING



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## HMSC SERIES - SFTY

### MANUAL-SAFETY COMPACT SERIES

UCT's manually operated surface-mount body and compact design valve with an extra safety feature that adds a fool-proof mechanism. This advanced safety system ensures secure valve operation during both opening and closing, remaining unaffected by handle movement within the initial 20 degrees. The mechanism plays a crucial role in eliminating unintentional opening or closing incidents by the operator.

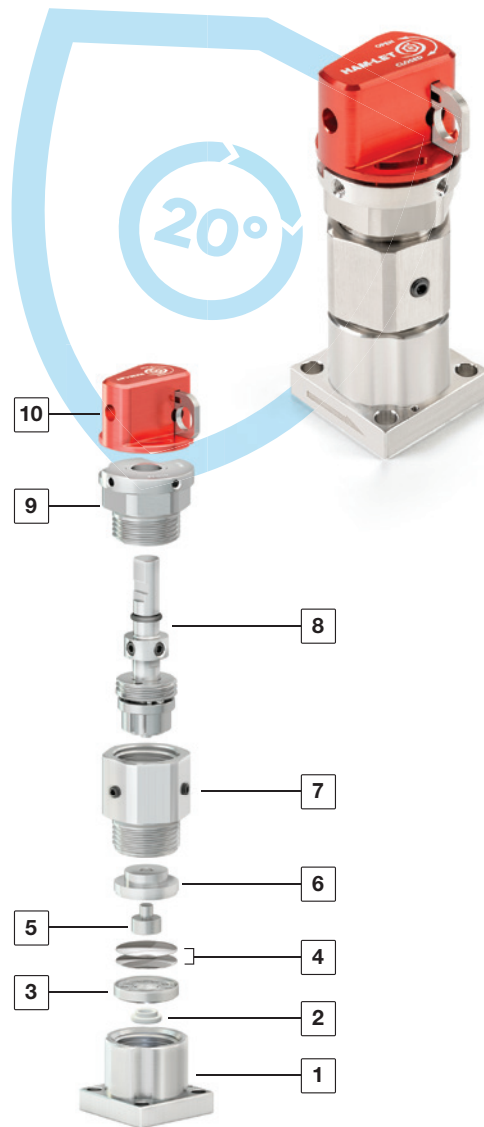
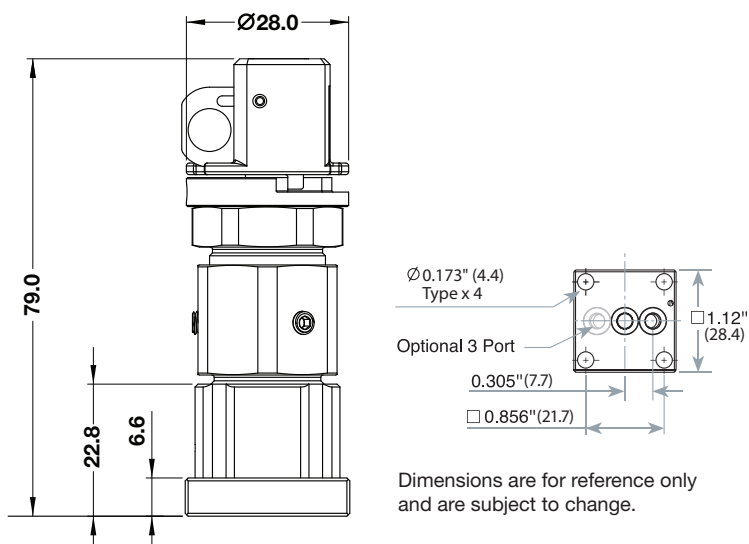
### UCV SPECIFICATIONS

Structure	Direct-seal, metal-diaphragm valve without seal packing, manually and pneumatically operated
<b>Design pressure</b>	Vacuum to 1MPa (150 psi)
<b>Burst pressure</b>	31MPa (4500 psi)
<b>Proof pressure</b>	1.38 MPa (200 psi)
<b>Operating temperature</b>	14 to 140°F, -10 to 60°C (PCTFE Seat)
<b>Leakage:</b> Inboard leakage	$\leq 3 \times 10^{-11}$ atm cc He/sec
Across the seat	$\leq 1 \times 10^{-9}$ atm cc He/sec
<b>Particles</b>	No particles detected above 0.1µm
<b>Cv value</b>	0.3
<b>Surface finish Ra (Ave)-standard</b>	5µin

### MATERIALS OF CONSTRUCTION

Item	Part No.	Material
1	Body	Stainless steel, 316L VAR
2	Seat	PCTFE
3	Seat holder	Stainless steel, 316L VAR
4	Diaphragm	Co-Cr-Ni Alloy
5	Act. Button	Stainless steel
6	Act. button holder	Stainless steel
7	Lower Bonnet	Stainless steel
8	Stem Assembly	Stainless steel
9	Upper Bonnet	Stainless steel
10	Handle	AL-6061 T6

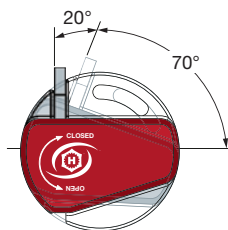
### DIMENSIONS



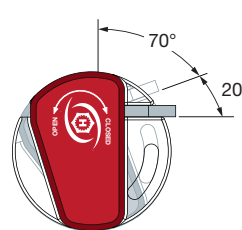
### HANDLE - MARKING AND POSITION

The valve remains unaffected within handle's first 20° of rotation

#### Open position



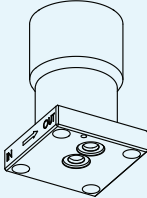
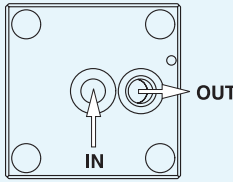
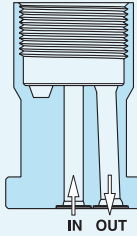
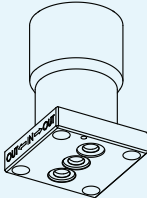
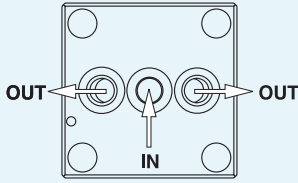
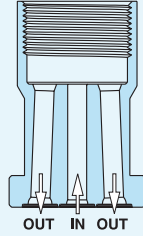
#### Closed position



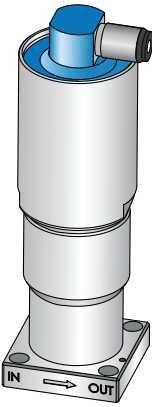
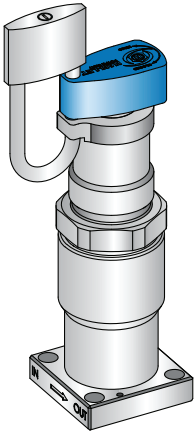
TWO STAGES FOR ORDERING SURFACE-MOUNT VALVES

**A** **B**

STAGE **A** VALVE TYPE

	Flow Direction Body View	Schematic Flow Chart	Flow Direction
<b>HMS(C)20</b> Two Port Valve			
<b>HMS(C)30</b> Three Port Valve			

STAGE **B** ACTUATION TYPE

Actuation Type	Actuation Mode	Description	Actuation Type	Actuation Mode	Description
Pneumatic	C	Normally Closed 150 psi Normally Opened 150 psi	Manual	LD	Oval Handle 1/4 turn 150 psi with Locking Device
		  ■ Blue/Red Actuation Cap indicates Normally Closed/Normally Open respectively			  ■ Manual valve does not include locking device or locker unit as standard

ORDERING INFORMATION - HMS & HMSC

Valve description example:

Stage

Valve description example:

HM

S

30

-

4

V

K

LQ

-

LD

Valve Series

S - UCV surface mount valves

SC - Compact UCV surface mount valves

Body Size

4 - 1/4" (Modular 1.125 inch)

8 - 1/2" (Modular 1.5 inch)

Seat Material

K - PCTFE

S\* - Polyimide

K Standard, \*Available.

\* Body 1/2" only with K

Valve Type

20 - Two port valve

30 - Three port valve

Body Raw Material

V - SS 316L VAR

Actuation Device

C - Air operated N.C. 150 psi

LO - Air operated N.O. 150 psi

LQ - Oval handle 1/4 turn 150 psi

Option

LD - Locking device

ISLT - LOTO device<sup>(1)</sup>

LS - Limit switch

SFTY - Manual seafy handle<sup>(2)</sup>

(1) Standard for HMSC LQ handle

(2) Available only for HMSC series

ORDERING EXAMPLES

Description	HMS30-4VSLQ-LD		HMS20-4VKC	
	30	Surface mounted valve - three port	20	Surface mounted valve - two port
Body size	4	1/4" (Modular 1.125 inch)	4	1/4" (Modular 1.125 inch)
Body material	V	SS316L VAR	V	SS316L VAR
Seat material	S	Polyimide	K	PCTFE
	LQ	Oval handle 1/4 turn 150 psi	C	Air operated N.C. 150 psi
Features	LD	Locking device		

## HCS SERIES

### HIGH CYCLE SURFACE MOUNT SERIES

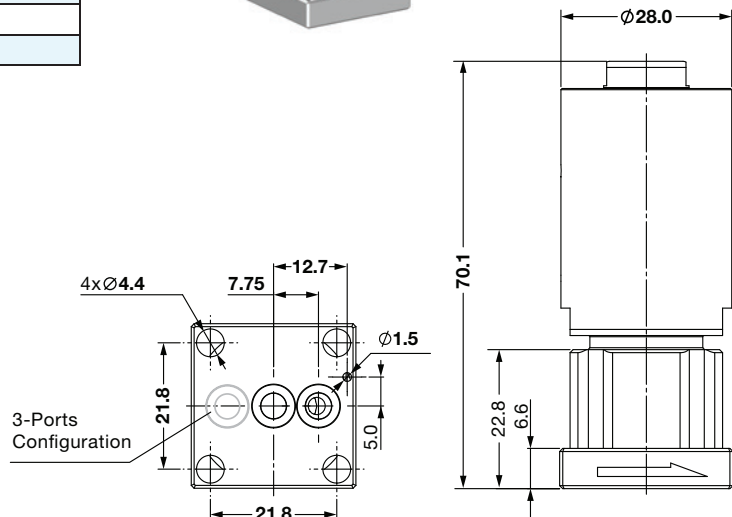
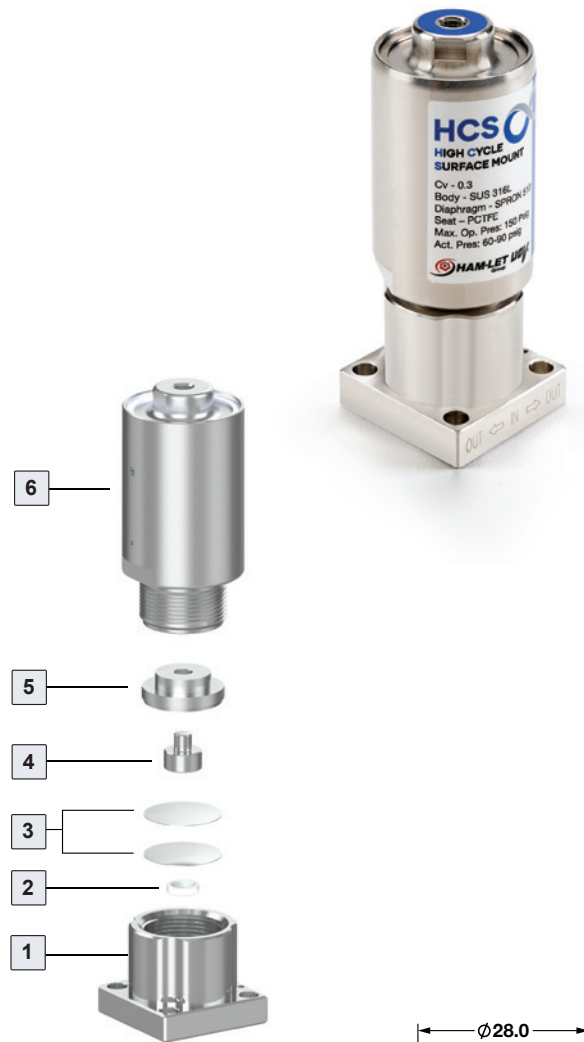
The Ultra-Clean Valves Series offers a surface mount body design.  
The surface mount design complies with SEMI F86 and F87 for 1.125" 2-port and 3-port C-Seal components.  
Low-profile design with a minimum dead volume.  
The HCS series dedicate for high reliability through its high cycle life.

### UCV SPECIFICATIONS

Structure	Direct-seal, metal-diaphragm valve without seal packing, manually and pneumatically operated
Design pressure	Vacuum to 150 psi (10.3 Bar)
Burst pressure	4500 psi (310.2 Bar)
Proof pressure	300 psi (20.7 Bar)
Operating temperature	-10 to 60°C
Leakage: Inboard leakage	$\leq 3 \times 10^{-11}$ atm cc He/sec
Across the seat	$\leq 1 \times 10^{-9}$ atm cc He/sec
Particle	No particles detected above 0.1µm.
Cv value	0.3
Surface finish Ra (Ave)-standard	5µin
Actuator air supply (pneumatic)	4 - 6 Bar
Air connection (pneumatic)	Thread M5

### MATERIALS OF CONSTRUCTION

Item No.	Part No.	Material
1	Body	SS 316L VAR
2	Seat	PCTFE
3	Diaphragm	Co-Cr-Ni Alloy
4	Act. button	Stainless Steel
5	Act. button holder	Stainless Steel
6	Actuator Shell	Stainless Steel



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The dimensions apply to pneumatic valves.  
Dimensions are for reference only and are subject to change.

ORDERING INFORMATION - HCS SERIES

HCS	20	-	4	V	K	LC	4M
Valve Series	Valve Type	Body Size		Seat Material		Actuation Device	Air Connection
	20 Two port valve	4	1/4" (1.125" C-Seal)	K	PCTFE	LC Air operated N.C.	Blank Thread M5
	30 Three port valve	Body Material				LO Air operated N.O.	4M For 4mm tube
		V	SST 316L VAR				1/8 For 1/8" tube

Note: For limit switch indicator, contact your local UCT representative



An Ultra-Clean metal diaphragm hybrid-operated valve in a surface-mount body design. The Hybrid-Pro series is designed for outstanding reliability by its high cycle life and stable flow coefficient.

## UCV SPECIFICATIONS

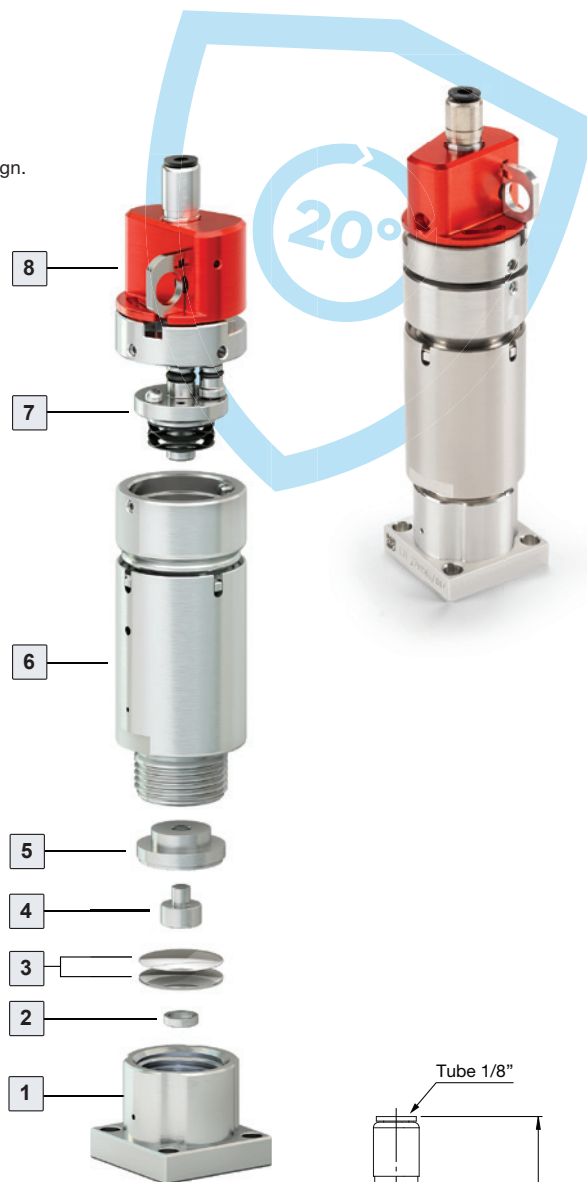
Structure	Direct-seal, metal-diaphragm valve without seal packing, manually and pneumatically operated
Design pressure	Vacuum to 150 psi (10.3 Bar)
Burst pressure	4500 psi (310.2 Bar)
Proof pressure	300 psi (20.7 Bar)
Operating temperature	-10 to 60°C
Leakage: Inboard leakage	$\leq 3 \times 10^{-11}$ atm cc He/sec
Across the seat	$\leq 1 \times 10^{-9}$ atm cc He/sec
Particle	No particles detected above 0.1µm.
Cv value	0.3
Surface finish Ra (Ave)-standard	5µin
Actuator air supply (pneumatic)	4 - 6 Bar
Air connection (pneumatic)	Thread M5

Item No.	Part No.	Material
1	Body	Stainless steel, 316L VAR
2	Seat	PCTFE
3	Diaphragm	Co-Cr-Ni Alloy
4	Act. Button	Stainless steel
5	Act. button holder	Stainless steel
6	Actuator Shell	Stainless Steel
7	Stem Assembly	Stainless Steel
8	Handle Assembly	Stainless Steel / Aluminum

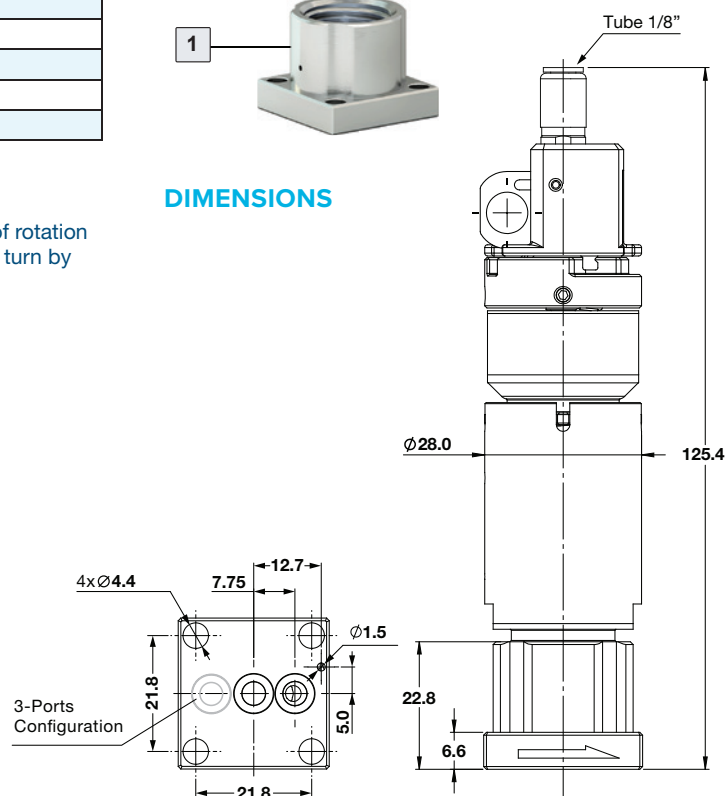
The valve remains unaffected within the handle's first 20° of rotation for opening or closing and eliminating unintentional handle turn by the operator



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## DIMENSIONS



ORDERING INFORMATION - HYBRID PRO SURFACE MOUNT

<b>HYP</b> <b>S</b>	<b>20</b>	-	<b>4</b>	<b>V</b>	<b>K</b>	<b>LC</b>			
Valve Series	Valve Type	Body Size		Body Material	Seat Material	Actuation Device			
<b>20</b>	Two port valve	<b>4</b>	1/4" (1.125" C-Seal)	<b>V</b>	SST 316L VAR	<b>K</b>	PCTFE	<b>LC</b>	Hybrid N.C.
<b>30</b>	Three port valve								

## 2LN SERIES (HYBRID)

### HYBRID VALVE

Metal Diaphragm Valves

Surface-mount models from the Ultra-Clean Valve specifications are ready for SEMI PR 3.1, 1.125" C seal connections.

These valves implement Cv 0.3 for their compact designs.



### VALVE DIMENSIONS

Part Number/ep	Size	End Connection	A		B		C		D		E		F		G		H		J	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
2LNS4C-CM2-HB	1/4"	1.125"	0.89	22.8	4.4	111.0	0.25	6.6	1.12	28.4	0.30	7.75	0.50	12.7	0.19	5	0.85	21.74	0.17	4.4

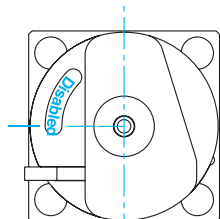
### SPECIFICATIONS

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 60°C	0.3	3 X 10 <sup>-12</sup> Pa <sup>1</sup> m <sup>3</sup> /sec Helium	3 X 10 <sup>-10</sup> Pa <sup>1</sup> m <sup>3</sup> /sec Helium

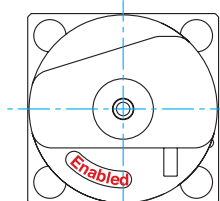
### MATERIALS OF CONSTRUCTION

Item No.	Part No.	Material
1	Body	SST, 316L Var or Vim/Var <sup>1</sup>
2	Seat	PCTFE, Polyimide
3	Diaphragm	Co-Cr-Ni Alloy
4	Act.Button	AMB6
5	Act.Button Holder	630SS
6	Spr - Act	630SS
7	Handle/Act	Aluminum

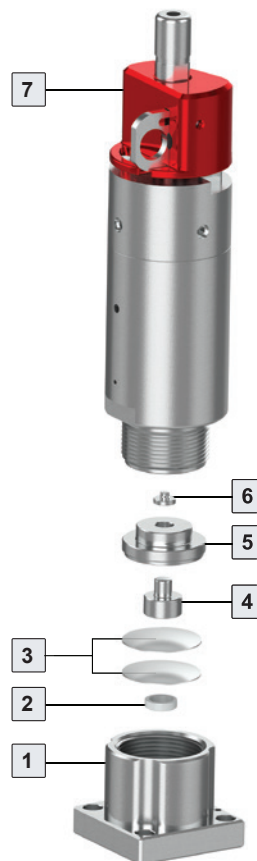
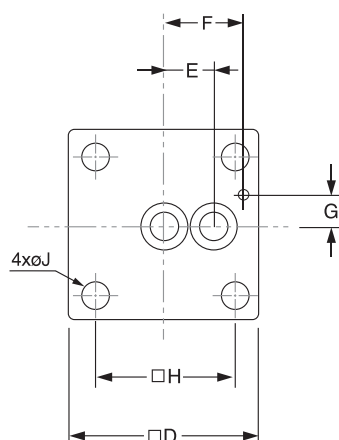
<sup>1</sup>Per SEMI F20-0305



View of B-B (Disabled Position)



View of B-B (Enabled Position)



### ORDERING INFORMATION

#### 2LNS4C-CM2-HB

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Surface Mount UCV | August 2025