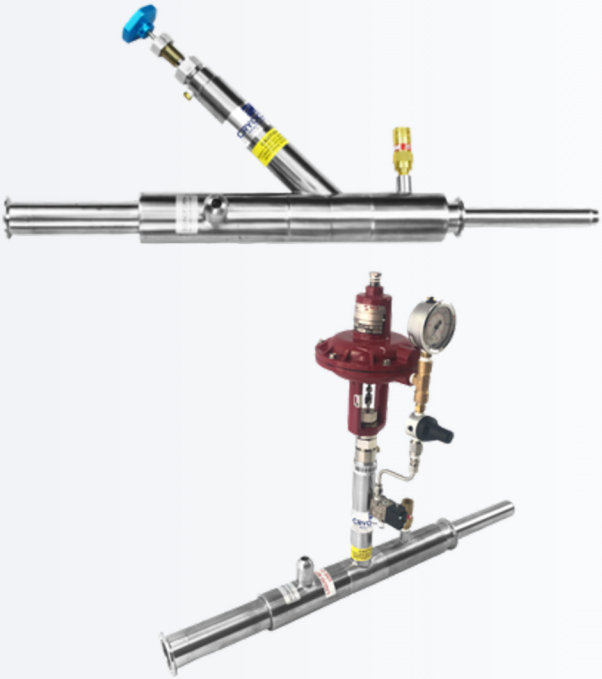
Modular Valve



Pre-engineered modular valve has added advantage over the traditional rigid VIP, especially when use with SemiFlex system. This option provide simplicity and cost saving as it reduces the necessity for precise system layout measurements. It also allows the valve to be easily reused if use-point locations and plant layout are changed.

Modular valve facilitate users to design and construct their own cryogen [1] delivery system with minimum piping engineering experience or knowledge.

[1] LCO_2 application must be moisture-free to prevent vacuum degradation

All Modular Valve come with CSM renowned customer service, from conceptual design to implementation, and are backed by a 5-years Vacuum Warranty, and 1-year Defect Warranty

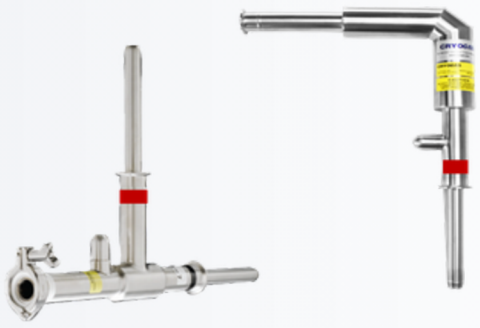
Vacuum Insulated Modular Valve

CSM vacuum insulated modular valve are recommended when system efficiency and elimination of frost, ice and moisture are essential. The initial cost is greater for the vacuum insulated option, but the savings outweigh the investment in less than a year.

By using a modular valve, one can expect a maintenance free operation that does not require frequent replacement of PU foam insulation. Vacuum insulated modular valve guarantees extremely low heat leak for minimum liquid boil-off compared to foam-insulated valve by at least 20 times. Thus liquid vaporization loss is reduced and liquid quality is maintained up to the point of use.

Modular valve are commonly used in both StatiRigid and SemiFlex piping systems with Dynamic or Static vacuum technology.

Related Products:



Fitting Module

Features and Benefits

- Available in T or Y pattern for horizontal or vertical installation
- Pneumatic actuators can be ordered on valves for remote control
- Low operation torque for bubble tight shut-off
- Cryogenic stem packing with live loaded design to compensate thermal contraction & expansion to prevent premature leakage
- Integral bonnet purge thermal relief port to eliminate extra fittings requirement and corresponding leak point
- Plug to stem stabilizer to ensure longer life cycle for the valve seat
- Replaceable KEL-F seat seal for lower maintenance & repair cost on the valve
- Contoured flow plugs available for flow regulation
- 5 years vacuum warranty for static vacuum

CRYOGENIC SPECIALTY MANUFACTURING
Email: info@csm-cryogenic.com

Valve Module Specifications

Model	Valve Size	MAWP	Flow Coefficient Cv		Cooldown Mass lbs (kg)		Valve Heat Leak @ 20 K Btu/hr (W)	Bayonet Heat Leak Btu/hr (W)	Valve Construction
			Y - Valve	T - Valve	Y - Valve	T - Valve			
V504	C2	150 psi	N/A	1.1	N/A	0.1 (0.05)	2.4 (0.7)	6.1 (1.8)	S/S 300
V204	C5	300 psi	5.7	2.6	0.5 (0.2)	0.7 (0.3)	4.5 (1.4)	4.0 (1.2)	
V208	C10		25	16.3	1.8 (0.8)	3.3 (1.5)	10.4 (3.1)	8.1 (2.4)	
V212	C15		42	31	6.2 (2.8)	9.1 (4.2)	21.8 (6.4)	7.8 (2.3)	
V216	B20		59.4	42.3	10.5 (4.8)	13.5 (6.2)	27.3 (8.0)	11.3 (3.3)	

Basic Liquid Flow Formula $C_v = Q_L\sqrt{\frac{SG}{\Delta P}}$

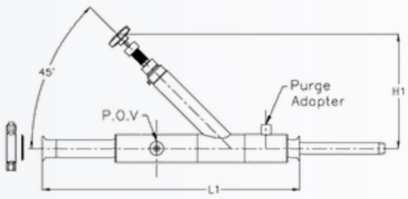
C_v = Flow Coefficient
Q_L = Flow (GPM)
SG = Specific Gravity
ΔP = Pressure Drop (psia)

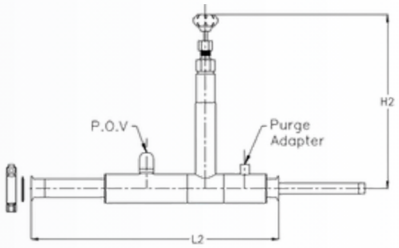
Valve Module Dimensions

Model [2]	Valve Size	Y - Valve		T - Valve	
		H1 Valve Open	L1	H2 Valve Open	L2
V504	C2	-	-	8.4″ (213 mm)	13.8″ (350 mm)
V204	C5	10.2″ (259 mm)	21.7″ (550 mm)	14.4″ (365 mm)	21.7″ (550 mm)
V208	C10		28.1″ (713 mm)	17.4″ (441 mm)	29.5″ (750 mm)
V212	C15		-	22.5″ (572 mm)	-
V216	B20		-	22.5″ (572 mm)	-

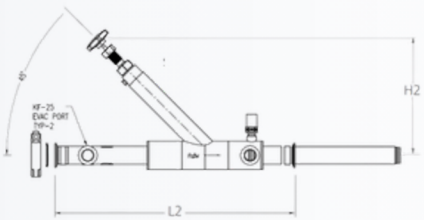
[2] *Other configurations are available, please contact us for more inquiries.*

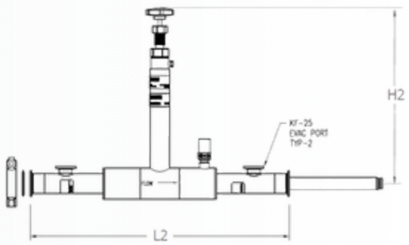
Static





Dynamic





All dimensions provided are for indication purposes only and may not accurately represent the actual product dimensions. Please contact us for updated and actual measurements.