

# VS-SIPHON 100

HIGH PRESSURE PUMP SYSTEM - FILLING LIQUID CYLINDERS

---

Chart has produced the VS-Siphon 100 system to provide an economical, reliable and high performance pumping system for high pressure and liquid cylinder filling. Current cryogenic tank and pumping systems have worked for years, but increased efficiencies are now available with the VS-Siphon 100 system.

The VS-Siphon 100 system combines two revolutionary technologies in cryogenic bulk tanks. Its improved and patented "thermal-siphoning" system reduces and efficiently reprocesses the heat of pumping. Additionally, this systems composite insulation is 30% to 70% more efficient than Perlite in reducing the effects of heat from the atmosphere.

## PRODUCT HIGHLIGHTS

---

- Faster pump priming of 3 minutes or less
- Simple and reliable pump start-up for automatic pump operation
- Utilization of all tank's product liquid by allowing the tank to be pumped empty
- Pump priming at tank pressure of 10 psi (0.69 bar) or less without the necessity for pressure building
- Reduced product losses
- Longer life of high-wear pump parts
- Capability to operate two pumps at once (liquid and HP pump)
- Adapters available to match all standard pumps



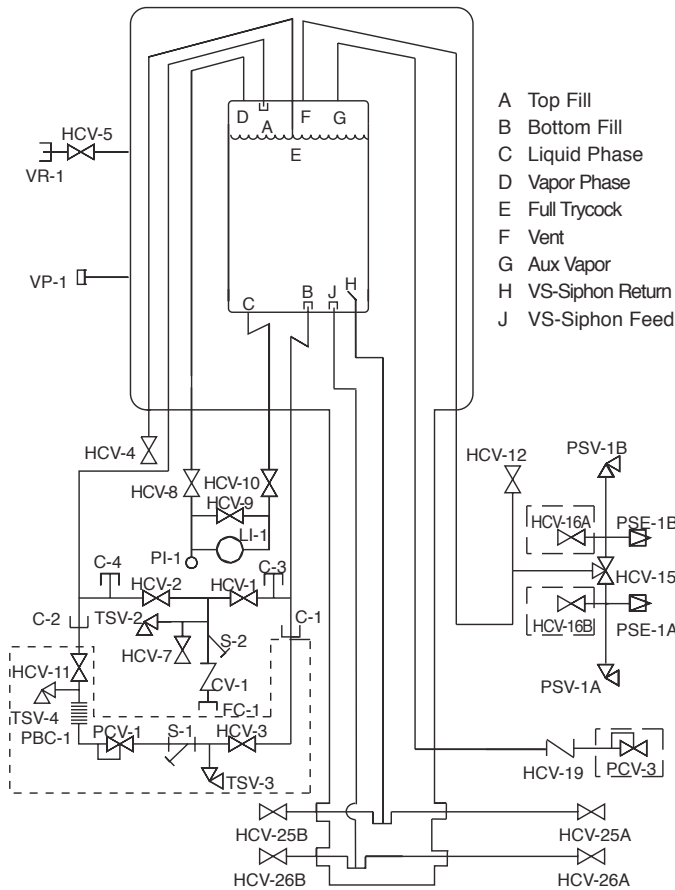
Innovation. Experience. Performance.™

# VS-SIPHON 100

HIGH PRESSURE PUMP SYSTEM - FILLING LIQUID CYLINDERS

Model	Gross Capacity		Nominal Capacity		Working Pressure		Diameter		Height		Weight		NER % /day in O <sub>2</sub>
	Gal	Liters	Gal	Liters	psig	bar	in	mm	in	mm	lbs.	Kg	
VS 2000NC	2,416	9,146	2,301	8,710	175	12.1	86	2,184	228	5,791	12,000	5,450	.25
VS 3000NC	3,158	11,995	3,037	11,495	175	12.1	86	2,184	271	6,883	14,400	6,530	.25
VS 6000NC	6,075	22,997	5,841	22,112	175	12.1	86	2,184	423	10,744	23,700	10,760	.15
VS 9000NC	9,447	35,761	9,084	34,387	175	12.1	114	2,896	398	10,109	34,900	15,840	.10
VS 1 1000NC	11,480	43,457	11,145	42,183	175	12.1	114	2,896	457	11,608	41,400	18,780	.10
VS 13000NC	13,513	51,152	13,119	49,661	175	12.1	114	2,896	516	13,106	49,700	22,550	.10
VS 15000NC	15,545	58,844	15,093	57,133	175	12.1	114	2,896	575	14,605	57,000	25,860	.10

(NER) = Nominal Evaporation Rate



## Nomenclature

C-1	Connection, Aux Liquid	PSV-1A	Press Safety Valve, Inner Vessel
C-2	Connection, Aux Vapor	PSV-1B	Press Safety Valve, Inner Vessel
C-3	Connection, Secondary Aux Liquid	S-2	Strainer, Fill Line
C-4	Connection, Secondary Aux Vapor	TSV-2	Thermal Safety Valve, Fill
CV-1	Check Valve, Fill	VP-1	Vacuum Port
FC-1	Connection Fill	VR-1	Vacuum Readout, Outer Vessel
HCV-1	Valve, Bottom Fill	<b>OPTIONAL VALVES (Not Shown)</b>	
HCV-2	Valve, Top Fill	HCV-21	Valve, Secondary Aux, Liquid, Installed at C-3
HCV-4	Valve, Full Trycock	HCV-22	Valve, Secondary Aux Vapor, installed at C-4
HCV-5	Valve, Vacuum Gauge Tube	<i>*Dashed lines are optional components</i>	
HCV-7	Valve, Fill Line Drain	HCV-16A	Valve, Relief Line Purge
HCV-8	Valve, LI-1 Vapor Phase	HCV-16B	Valve, Relief Line Purge
HCV-9	Valve, LI-1 Equalization	HCV-3	Valve, PB Inlet
HCV-10	Valve, LI-1 Liquid Phase	HCV-11	Valve, PB Outlet
HCV-12	Valve, Vapor Vent	PBC-1	Pressure Bldg Coil, Inr Ves
HCV-15	Valve, Safety Relief Selector	PCV-1	Pressure Control Valve, Inr Ves
HCV-19	Valve, Aux Vapor	PCV-3	Pressure Control Valve, Back Pressure
HCV-25A	Valve, VS-Siphon Return	S-1	Strainer, Pressure Builder
HCV-25B	Valve, VS-Siphon Return	TSV-3	Thermal Safety Valve, PB Circuit
HCV-26A	Valve, VS-Siphon Feed	TSV-4	Thermal Safety Valve, PB Circuit
HCV-26B	Valve, VS-Siphon Feed		
LI-1	Level Indicator, Inr Ves		
PI-1	Pressure Indicator, Inr Ves		
PSE-1A	Press Safety Element, Inner Ves.		
PSE-1B	Press Safety Element, Inner Ves.		