

CHILLZILLA® LN₂

BULK LN₂ SUPPLY MANAGEMENT SYSTEM

The ChillZilla® bulk LN₂ Liquid Supply System is engineered to provide consistent liquid nitrogen for optimum equipment performance. Ideally suited for Individually Quick Frozen (IQF), LN₂ immersion freezers and cryobiological storage freezers, the ChillZilla LN₂ system features a Dynamic Pressure Builder™ for precise saturated liquid supply to the freezer *regardless* of the LN₂ liquid level. The ChillZilla system incorporates an insulation baffle to inhibit the mixing of fresh liquid from a trailer load delivery with the liquid supply to the freezer for better liquid supply stability during the refill.

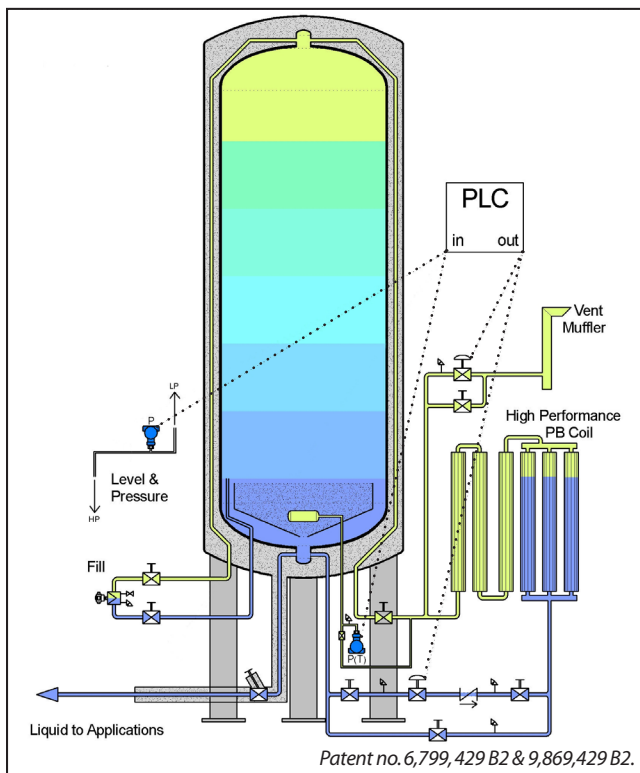
With the aid of a patented high performance two-stage ambient pressure building coil, the heat management of this circuit is optimized for fast pressure recovery and reduced heat transfer to the contents. Coupling these unique features with the temperature monitoring of the liquid supply, a Programmable Logic Controller (PLC), VJ feed valve with an extended VJ pod and extended legs, the ChillZilla LN₂ system *automatically* provides the *optimum* liquid nitrogen supply to any liquid application.

Ideally suited for other LN₂ applications with the same demand, like cryogenic rubber and tire deflashing. Optional gas use conversion assembly available.



1 1/2" Vacuum Jacketed Valve and Female Bayonet Standard for Liquid Supply

Shown with optional 40 gpm (8 tph) PB coil



PRODUCT HIGHLIGHTS

- Dynamic Pressure Builder™ System for precise saturated LN₂ supply regardless of liquid level
- Insulation Baffle with dedicated upper fill port for uninterrupted LN₂ supply during transport refill
- High performance two-stage ambient pressure builder vaporizer for maximum efficiency (20 gpm (4 tph) standard)
- PLC controlled with actual LN₂ storage temperature, pressure and level monitoring for precise tank pressure control (PB and Vent) with automatic desaturation capability
- High flow automatic pressure building valve improves response time and performance after a fill along with a tighter operating pressure dead-band
- Extended legs and vacuum insulated pod for increased head pressure aids in dampening LN₂ saturation pressure fluctuations
- Large 1 1/2" vacuum insulated inner supply line provides 20 gpm flow*
- Large 1 1/2" vacuum insulated isolation valve with mating female bayonet for plug-n-play to Chart VIP and ice-ball free operation
- Dual 125 PSI main tank relief valves standard to protect downstream VIP system (175 psig tank MAWP)**
- Reduced deliveries and improved inventory turn-over with 95% bulk tank capacity utilization
- High-performance Composite Super Insulation™ (CSI) for ultra-low heat leak

* 1 1/2" VIP system of 300' VIP + 5 elbows + 2 valves = 2 psi pressure drop
 ** Maximum Allowable Operating Pressure (MAOP) = 75 psig



Innovation. Experience. Performance.®

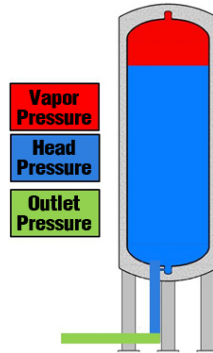
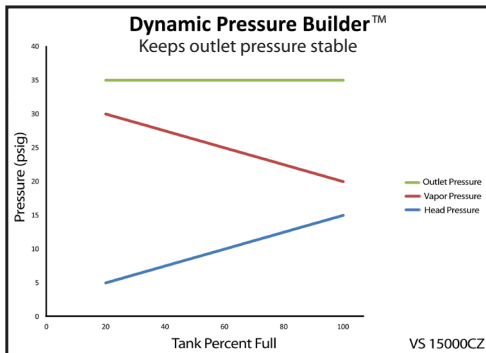
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Tank Specifications

Model	Gross Capacity		Nominal Capacity		MAWP*		Diameter		Height		Weight**		NER % /day LN ₂
	Gal	Liters	Gal	Liters	psig	bar	in	mm	in	mm	lbs.	Kg	
VS 9000CZ	9,354	35,410	8,990	34,031	175	12.1	114	2,896	398	10,109	32,100	14,560	.16
VS 11000CZ	11,410	43,192	10,960	41,438	175	12.1	114	2,896	457	11,608	37,900	17,191	.16
VS 13000CZ	13,470	50,989	13,060	49,437	175	12.1	114	2,896	516	13,106	44,300	20,094	.16
VS 15000CZ	15,520	58,750	15,060	57,008	175	12.1	114	2,896	575	14,605	50,600	22,952	.16

*MAWP - Maximum Allowable Working Pressure. **Weights are for ASME design.
(NER) = Nominal Evaporation Rate

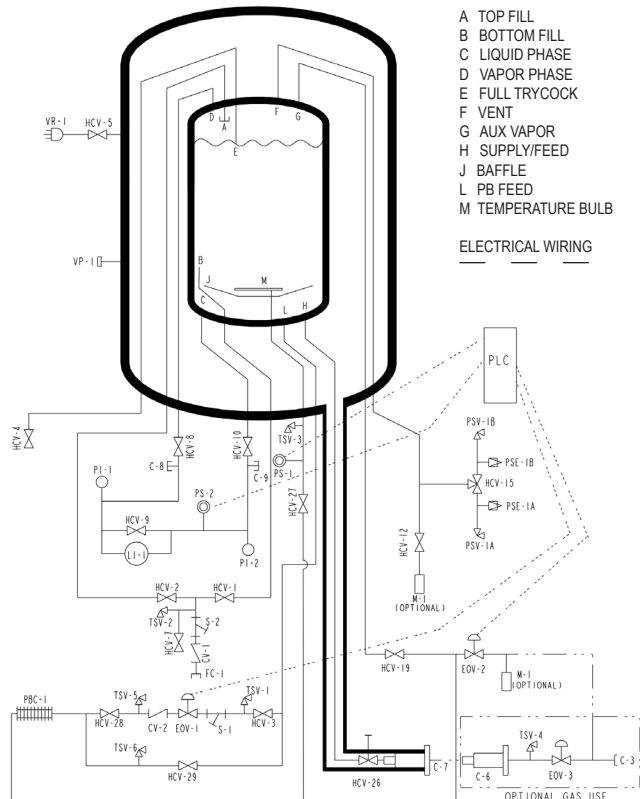


System Requirements

- PLC: 120 VAC/1Ph/60Hz
15 Amp

Options

- 2" VIP supply line and valve for 40 gpm (8 tph) flow
(300' VIP + 5 elbows + 2 valves = 2 psi pressure drop)
- 40 gpm (8 tph) PB coil
- Vent muffler
- Gas use conversion assembly
- Redundant fill valves



Nomenclature

C-7	Liquid Feed FBayo VJ	PLC	Programmable Logic Controller
C-8	Telemetry Tap GPL	PBC-1	Pressure Build Coil
C-9	Telemetry Tap LPH	PS-1	Pressure Sensor, Temp Bulb
CV-1	Check Valve, Fill Line	PS-2	Pressure Sensor, Inr Vessel
CV-2	Check Valve, PB Coil Feed	PSE-1A	Pressure Safety Element, Inner Vessel
EOV-1	Electric Actuated Valve	PSE-1B	Pressure Safety Element, Inner Vessel
EOV-2	Electric Actuated Valve Vent Connection Fill	PSV-1A	Pressure Safety Valve, Inner Vessel
FC-1	Connection Fill	PSV-1B	Pressure Safety Valve, Inner Vessel
HCV-1	Valve, Bottom Fill	S-1	Strainer, EOV-1
HCV-2	Valve, Top Fill	S-2	Strainer, Fill Line
HCV-3	Valve, PB Inlet	TSV-1	Thermal Relief, PB Circuit
HCV-4	Valve, Full Trycock	TSV-2	Thermal Relief, Fill Line
HCV-5	Valve, Vacuum Gauge Tube	TSV-3	Thermal Relief Temp Bulb
HCV-7	Valve, Fill Line Drain	TSV-5	Thermal Relief, PB Circuit
HCV-8	Valve, LI-1 Vapor Phase	TSV-6	Thermal Relief, PB Circuit
HCV-9	Valve, LI-1 Equalization	VP-1	Vacuum Port
HCV-10	Valve, LI-1 Liquid Phase	VR-1	Vacuum Readout
HCV-12	Valve, Vapor Vent		
HCV-15	Valve, Safety Relief Selector		
HCV-19	Valve, Aux Vapor		
HCV-26	Valve, Liquid Feed, VJ		
HCV-27	Valve, Temperature Bulb Feed Valve PBC-1		
HCV-28	Feed By-Pass Valve PBC-1		
HCV-29	Feed By-Pass Valve PBC-1		
LI-1	Level Indicator, Inr Vessel		
M-1	Muffler (optional)		
PI-1	Pressure Indicator Gauge (Gas)		
PI-2	Pressure Indicator Gauge (Liquid)		
		GAS USE OPTION	
		C-3	Gas Use
		C-6	Gas Use MBayo VJ
		EOV-3	Electric Actuated Valve Gas Use Option
		TSV-4	Thermal Relief Gas Use Option