

# Phase Separator

Stainless steel, vacuum insulated vessels designed to store liquid nitrogen under atmospheric pressure.

## Phase Separator

Phase Separators are used in specialized applications requiring extremely high quality, low pressure liquid nitrogen on demand. The level of liquid nitrogen inside is controlled electronically via a pressure differential system. The reservoir is vented to atmosphere at all times ensuring that the pressure inside is equal to atmosphere. This results in a volume of pure saturated liquid nitrogen. Cryotech's Phase Separator is a vacuum insulated reservoir holding tank for liquid nitrogen.

Typical applications include both direct feed or closed loop systems. A closed loop system is typically used to feed a cryopanel in an MBE (molecular beam epitaxy) application. Dynamic or static Cryotech pipes are used to feed liquid nitrogen into the Phase Separator. Specialty triaxial pipe delivers pure liquid nitrogen for the Phase Separator to the application tool inlet.



## Features

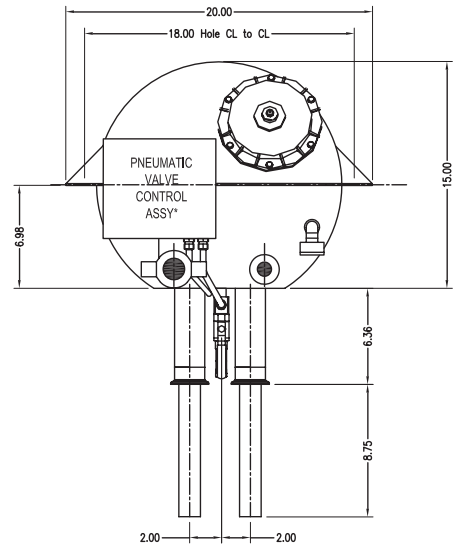
- **Differential Pressure Controls and Proportional Inlet Valve** – tried and proven method to maintain a constant level of cryogenics
- **Ready Supply of Pure Liquid** – mandatory for critical applications, testing, and processes
- **High Volume Phase Separators** – for custom applications requiring more capacity
- **Dynamic and Static Pipe Compatible** – available in both dynamic and static vacuum design
- **Triax Compatible** – eliminates two phase flow of liquid nitrogen to use points
- **One Year Warranty** – covers materials and workmanship defects

## Key Benefits

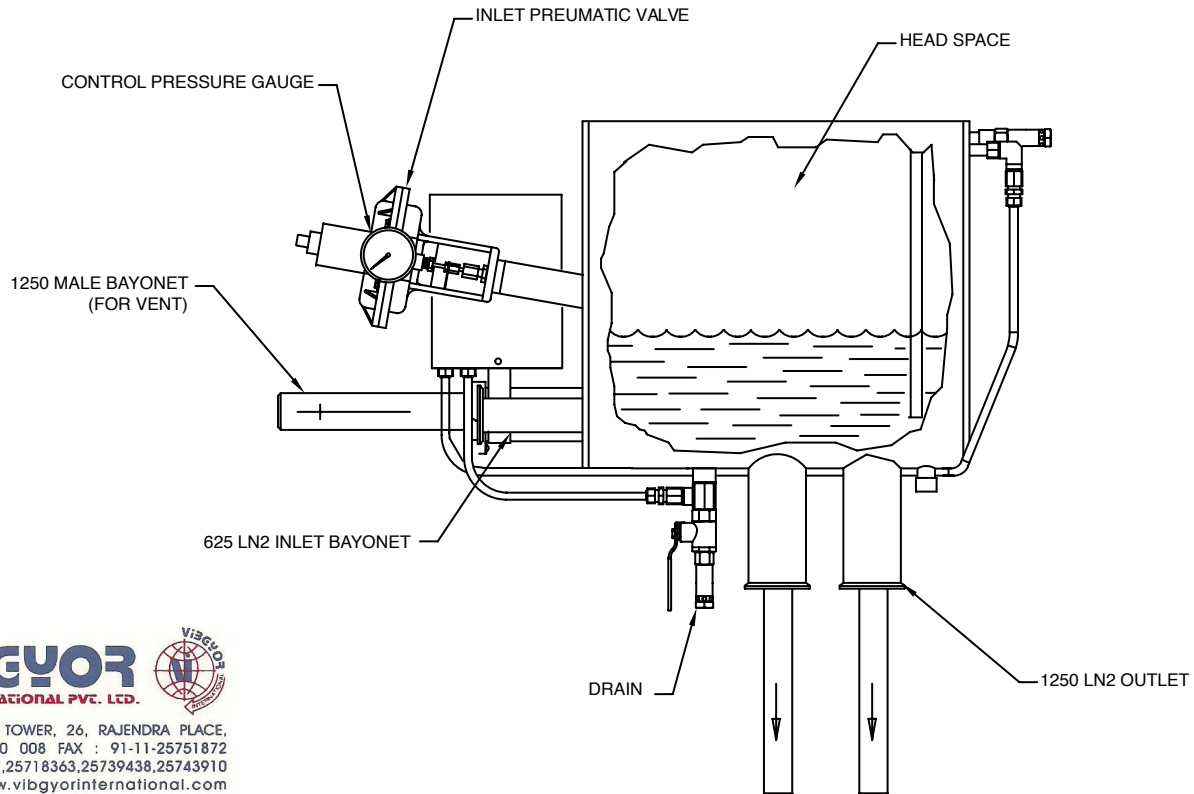
- **Low Pressure LN2** – stored at atmospheric pressure to gravity feed LN2
- **Pure LN2 Delivery** – LN2 at atmospheric pressure guarantees highly saturated LN2 delivery
- **Closed Loop System** – re-circulate and re-use LN2 through the Phase Separator and custom designed triax pipe
- **On Demand LN2** – LN2 is stored in the Phase Separator for immediate, on demand consumption

# PhaseSeparator Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Materials</b>                     | Stainless Steel 300  |
| <b>Controller Dimensions</b>         | 14" H x 6.5 D x 2.5" W<br>(356 mm H x 165 mm D x 64 mm W)  |
| <b>Number of Outlets</b>             | 2 to 10 (even increments)  |
| <b>Capacity / Operational Volume</b> | 2 & 4 outlets: 4.63 gallons (17.53 liters)<br>6, 8, & 10 outlets: 12.19 gallons (46.14 liters)   |
| <b>Weight</b>                        | <b>Empty Condition:</b> 60 - 85 lbs (27.2 - 38.6 kg)<br><b>Full Condition:</b> 100 - 163 lbs (45.4 - 73.9 kg)  |
| <b>System Utilities</b>              | <b>Electricity:</b> 110 - 220 VAC, 50 - 60 Hz<br><b>Gaseous Nitrogen:</b><br>Minimum 50 psi (3.45 bar), maximum 100 psi (6.89 bar)<br><b>Liquid Nitrogen:</b><br>Maximum 125 psi (8.62 bar); 80 psi (5.52 bar) optimal |
| <b>Certifications</b>                | NEMA 4X, CE  |
| <b>Options</b>                       | Custom sizes, ASME coded pressure vessels, back pressure regulator (10 psi / 0.7 bar max)  |



# PhaseSeparator Diagram



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