

Gravity-Feed Phase Separator

A CryoWorks Phase Separator splits the incoming two-phase flow into separate liquid and vapor streams. The vapor stream is vented to the atmosphere while the single-phase liquid is dispensed to your equipment. Regardless of your application, singlephase liquid is a more effective working fluid, and a CryoWorks Phase Separator will supply high-quality liquid on demand. CryoWorks Phase Separators are versatile and modular in design.

GFPS Design Specifics:

A CryoWorks Gravity-Feed Phase Separator (GFPS) is designed to maintain high-quality liquid for on-demand withdrawal at atmospheric pressure. The headspace of the GFPS is open to the atmosphere to ensure no pressure build-up inside the phase separator.



GFPS Features:

Low Pressure Saturated Liquid — gravity-feed from the GFPS to your use points.

Proportionally Controlled Inlet Fill Valve — controls incoming flow from the higher-pressure liquid nitrogen source to maintain the set liquid level.

Differential Pressure Controller — Dependable liquid nitrogen levels.

Related Components — CryoWorks Rigid VIP and Flexible VIP (Coaxial and Triaxial), Vacuum Insulated Valves & TAL Bayonet.

GFPS Technical Specifications:

SHORT BODY LIQUID — 5.8 Gallons (22 Liters): 2 & 4 Outlets **CAPACITY**

LONG BODY LIQUID — 12.8 Gallons (49 Liters): 2, 4, 6, 8, 10 & 12 Outlets CAPACITY

SERVICE/MAWP — Liquid Nitrogen (LN2): 150 PSIG Max

UTILITIES REQUIRED — Gaseous Nitrogen (GN2): 50 - 400 PSIG Sensor Box Controller Electricity: 100 – 240 VAC (50 – 60 Hz)

OPTIONAL VENT — Standard: 100 - 120 VAC (50 - 60 Hz) HEATER **Optional:** 220 - 240 VAC (50 - 60 Hz)

COMMUNICATION —— Standard: Ethernet Modbus TCP, USB 2 Standard Bus, SCPI

PROTOCOL Adder: Modbus® RTU

— 145 lbs (66 kg) – 245 lbs (111 kg) DRY WEIGHT — **FULL WEIGHT** — 185 lbs (84 kg) – 330 lbs (150 kg)

VACUUM INSULATION — Standard: Static Vacuum Design Optional: Dynamic Vacuum Design

MATERIALS —— 304/304L Stainless Steel

CODES AND CERTS —— Assembly: Built to ASME B31.3 Process Piping

Controller: NEMA 4X Electrical Enclosures

OPTIONS Customization, Overflow Protection, Vertical Orientation,

System Redundancy, Oxygen and Facility Monitor Integration. For Adjustable Pressure or Line Pressure Phase Separator

Designs - see CryoWorks APPS & LPPS Literature.



Controller



Touchscreen User Interface

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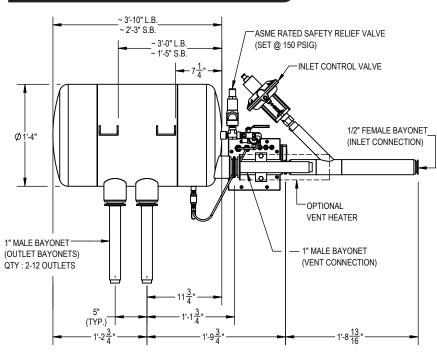
Key GFPS Benefits:

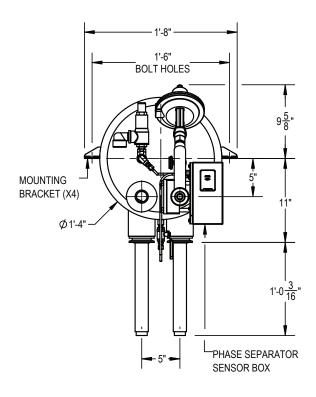
- Atmospheric Pressure
- Low Temp/Gravity-Fed LN2
- Pure Saturated LN2
- · Liquid on Demand Delivery
- Closed Loop Systems
- Triax Pipe Compatible
- Max Ceiling Height Design

Versatile Controller:

- · Compatible with most BMS systems
- Easy to read liquid level
- · User Friendly Interface
- User defined alarm, liquid level set points
- 4.3 inch color and graphical touch panel
- Modular and scalable
- Various levels of Password Protections

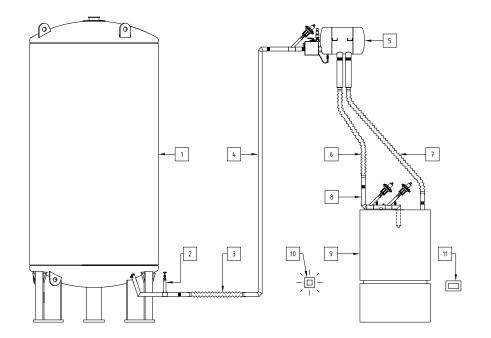
Diagram:





Applications:

A CryoWorks GFPS can be used with closed loop systems utilizing supply and return lines. Ideal for applications requiring gravity-fed liquid such as Molecular Beam Epitaxy (MBE), Thermal Vacuum Chambers (TVAC) and Food and Beverage (Ice Cream / Bottle Dosing & Inerting).



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ITEM #	DESCRIPTION
1	LN2 BULK TANK
2	V.J. WITHDRAWAL VALVE AND BAYONET
3	V.J. FLEX SECTION
4	V.J. RIGID PIPE
5	PHASE SEPARATOR
6	V.J. SUPPLY LINE
7	OPTIONAL V.J. RETURN
8	LN2 CONTROL MANIFOLD
9	CUSTOMER EQUIPMENT
10	02 MONITOR
11	PHASE SEPARATOR LIQUID LEVEL CONTROLLER

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