



**CRYOGAS INDUSTRIES**

## VAPORIZERS

### Ambient Low & Medium Pressure Vaporizers

CRYOGAS offers wide range of Natural Draft Ambient Aluminum Cryogenic Vaporizers to meet varied requirement.

All the Vaporizers from 20 Nm<sup>3</sup>/Hr to 6000 Nm<sup>3</sup>/Hr as Single module are manufactured using aluminum material of different grades for different parts. For Structural Sections, Cryogas employs high strength Aluminum Alloys.

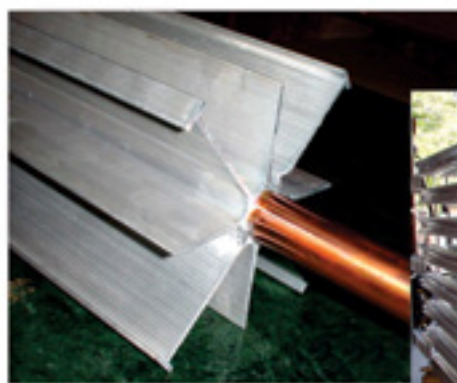


**Range :** 50 to 6000 NM<sup>3</sup>/hr  
**Pressure :** Upto 70 Bar

### Ambient High Pressure Lined Vaporizers

High Pressure Vaporizers are available in Maximum Operating Pressure of 210 Bar, 320 Bar & 425 Bar.

With Aluminium Fins - Lining of SS, Brass, Copper, Copper Nickle (90:10) Monel used for different Gases.



**Range :** 50 to 2400 NM<sup>3</sup>/hr  
**Pressure :** Upto 690 Bar

### Pressure Building Vaporizers

All aluminum construction for any given withdrawal rate and duty cycle of 8, 16, 24 hours or non stop continuous application round the year.

Design available for PB Coils for Storage Tanks, Transport Tankers & Semi Trailers.



**Range :** 10 to 5000 NM<sup>3</sup>/hr  
**Pressure :** Upto 70 Bar





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## MANUAL CYLINDER FILLING STATIONS

### Ground Mounted Cylinder Filling Manifold

Ground Mounted Cylinder Filling Manifolds are available for bottling as well as cylinder backup and supply systems.

Cryogas offers manual and semi automatic bottling station with available options of....

1. SS
2. Copper
3. Copper-Nickel (90:10)
4. MONEL



**Range :** For all Gases  
**Pressure :** Upto 690 Bar



### Overhead Type Cylinder Filling Stations

Over Head Type Cylinder Filling Manifold provide flexibility and enable palletized bottle filling.

Cryogas offers manual and semi automatic bottling station with available options of....

1. SS
2. Copper
3. Copper-Nickel (90:10)
4. MONEL



**Range :** For all Gases  
**Pressure :** Upto 690 Bar



### Mobile Cylinder Filling Stations

Mobile Cylinder Filling Stations are skid mounted Multi Purpose System.

Upto Three Gas Mixtures can be filled at project sites and reduce transportation of cylinders. Skid is Mounted with High Pressure Pump, High Pressure Vaporizers, Vacuum Pump, Oil Trap, Safety Systems & Manifold & its inter connection on common portable skid.

Top lifting eyes and Forklift part provide ease of operation.



**Range :** For all Gases  
**Pressure :** Upto 690 Bar







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## PALLETIZED SEMI / FULLY AUTOMATED CYLINDER FILLING STATIONS



Cryogas ( *Weldco* - India ) offer Automatic Bottling Station in Collaboration with Weldco - USA



### Regd. Office :

A-36, Ghanshyam Nagar Society No.2,  
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CRYOGAS INDUSTRIES

## SUPER INSULATED VACUUM JACKETED PIPE LINE

Cryogas India specializes in the design and manufacturer of **Multilayer Super Insulated Vacuum Jacketed Piping**. Whilst this covers a vast field of work, in particular we devote our attention to the following areas.

### **Bayonet Joints**

1. Simplicity of Installation
2. Fully Flanged - No site welding
3. Very Secure, Dual Leaktight Seal on the Nose and Flange
4. Wide Range of Operating Pressure
5. Service Conditions with Confidence



Vacuum Insulated Pipe lines are designed to transfer cryogenic liquids over a given distance without boiling the fluid and incurring the costly losses associated with un-insulated transfer lines. We design and manufacture made to measure Vacuum Insulated Piping to suit any application and in standard sizes.



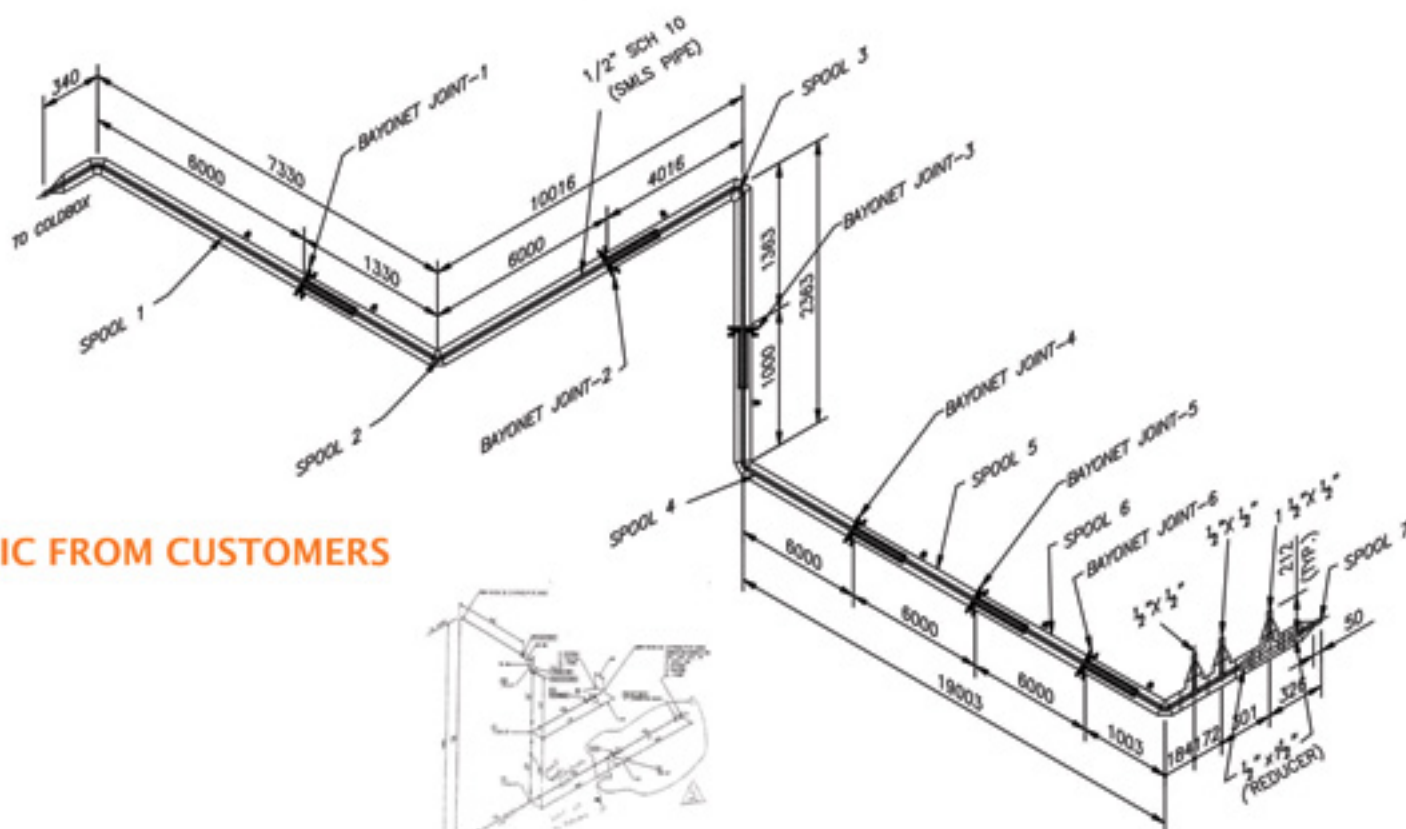
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## SUPER INSULATED VACUUM JACKETED PIPE LINE

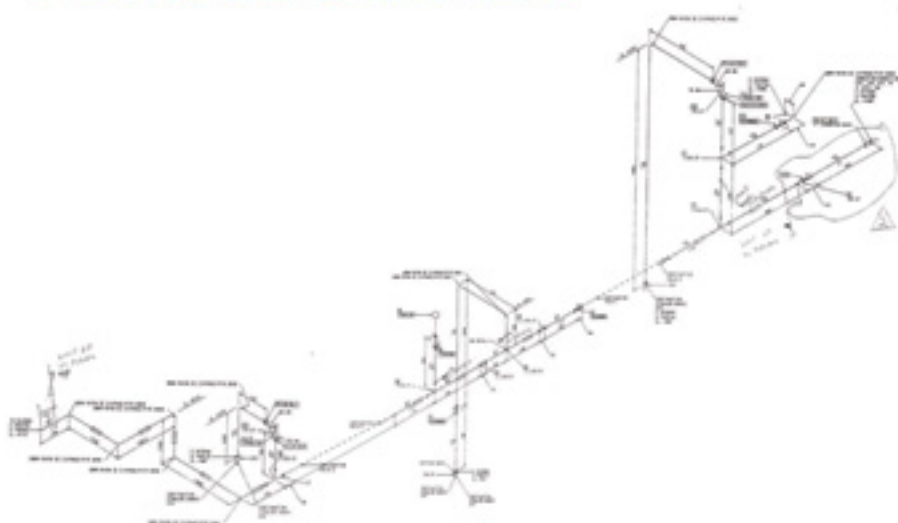
### RANGE :

- Size** :  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ", 2, 3, 4, 6, 8, 10 Inner Pipe
- Pressure** : Upto 100 Bar
- Type** : Rigid & Flexible
- Ends** : Bayonets, Flanged, Weldble

### SPOOL DEVELOPMENT BY CRYOGAS



### ISOMETRIC FROM CUSTOMERS



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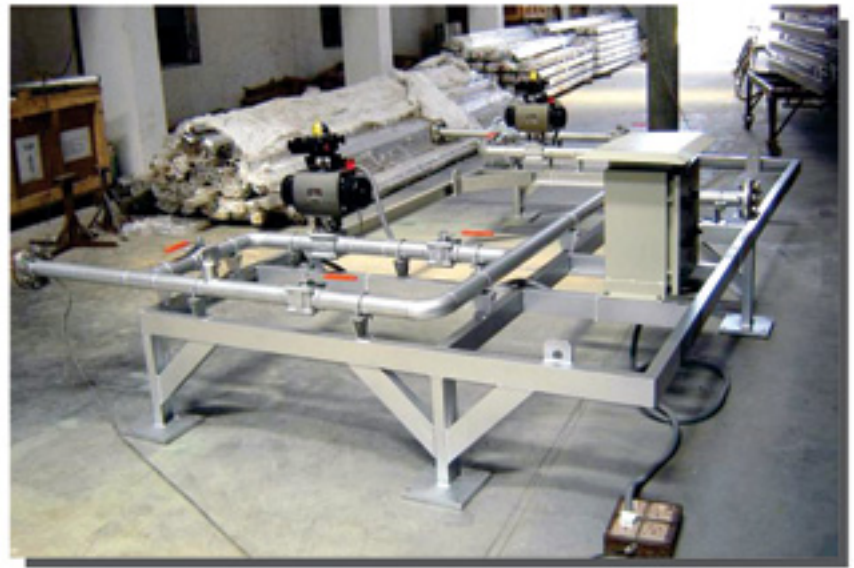




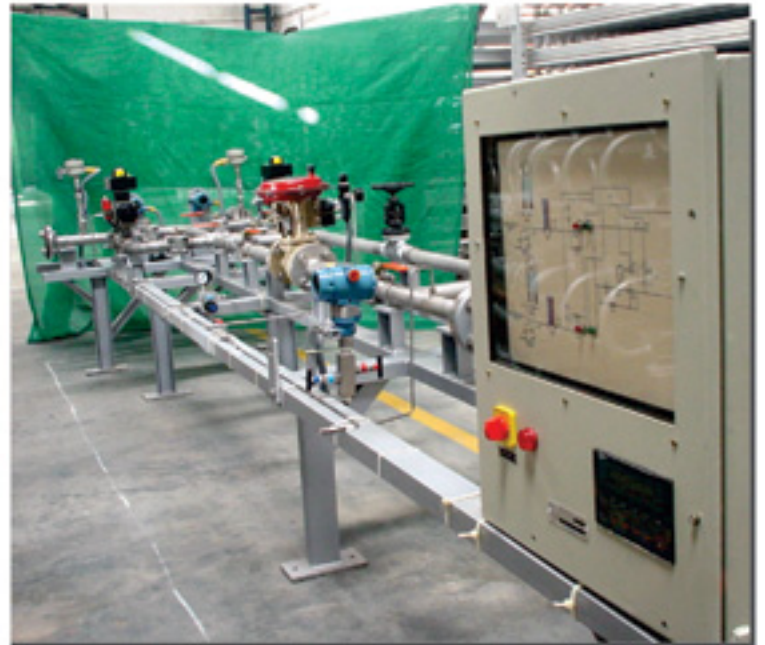
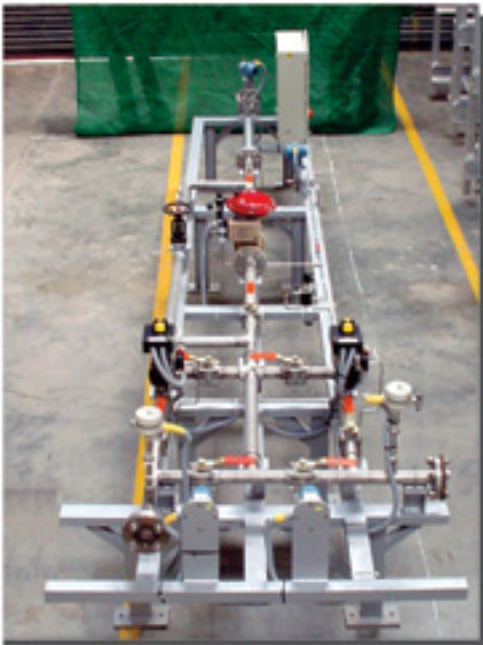
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## AUTO SWITCHING SKID

### Simple Time & Temperature Based Auto Switching System



### Time & Temperature Based Auto Switching System with Pressure & Flow Control



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## PUMPING SKID

### High Flow Nitrogen Pump Unit

**Range :** 300, 400, 500, 600 LPM  
**Pressure :** as per requirement



### High Pressure Nitrogen Pumping Unit

**Range :** 250, 500, 800, 1000, 1500 Nm<sup>3</sup>/hr  
**Pressure :** upto 320 bar Operating Pressure



### Combined Pump & Vaporizer Skid For High Pressure Purging

**Range :** 300, 400, 500, 600 LPM  
**Pressure :** as per your requirement



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## HEROSE - GMBH : VALVES

### Safety valves for gases, vapours and fluids



Media: Gases, vapours, fluids and refrigerants  
Sizes: 1/4" to 2"  
Temperature: -50°C (-58°F) to +225°C (+437°F)  
Pressure: 0,2 bar (3 psi) to 30 bar (435 psi)

### Safety valves for Cryogenic Service



Media: liquefied gases such as oxygen, nitrogen, argon, carbon dioxide etc.  
Sizes: DN6 (1/4") to DN25 (1")  
Temperature: -270°C (-454°F) to +225°C (+437°F)  
Pressure: 0,2 bar (3 psi) to 50 bar (725 psi)

### Globe valves, control valves, check valves and fillsystems for Cryogenic Service



Media: liquefied gases such as oxygen, nitrogen, argon, krypton etc.  
Sizes: DN10 (3/8") to DN50 (2") (bronze)  
DN10 (3/8") to DN150 (6") (stainless steel)  
Temperature: -225°C (-373°F) to +120°C (+280°F)  
Pressure: up to 50 bar (725 psi)

### Drain valves, three-way valves and gate valves for oil-cooled transformers



Media: transformer oil  
Sizes: DN15 (1/2") to DN100 (4")  
Temperature: -25°C (-13°F) to +115°C (+239°F)  
Pressure: up to 16 bar (232 psi)

### DIN EN valves made of bronze/brass



Media: non-flammable and non-toxic fluids, gases and vapours  
Sizes: DN6 (1/4") to DN150 (6")  
Temperature: -10°C (+14°F) to +200°C (+392°F)  
Pressure: up to 40 bar (580 psi)





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## LNG - LIQUIFIED NATURAL GAS

Natural Gas Delivered at Your Door Step



LOADING AT LNG TERMINAL



UNLOADING AT LNG EXPRESS STATION



QUICK CONNECT AT CONSUMER SITE  
PEACE OF MIND DELIVERED AT DOOR STEP



CNG FILLING AT LNG EXPRESS STATION







**CRYOGAS INDUSTRIES**

## **ISO CONTAINERS**



**10 Feet ISO Containers for LAR, ANG**

**Domestic & International Transportation of Cryogenic Liquids & LNG by ISO Containers**



**20 Feet ISO Container for LAR, LNG**

corporate url : [www.cryogasindustries.com](http://www.cryogasindustries.com)





CRYOGAS INDUSTRIES

## MICRO BULK

### LIQUID GAS PACK (LGP)



#### *For Storage of...*

- LNG - Liquid Natural Gas
- Liquid Oxygen - LOX
- Liquid Nitrogen - LIN
- Liquid Argon - LAr
- Liquid Nitrous Oxide - LN2O
- Liquid Carbon Dioxide - LCO2

#### **Range :**

LGPV - 987 B 18 - CS

LGPV - 987 B 34 - CS

### MOBILE LIQUID CYLINDER (MLC)

#### *For Storage of...*

- LNG - Liquid Natural Gas
- Liquid Oxygen - LOX
- Liquid Nitrogen - LIN
- Liquid Argon - LAr
- Liquid Nitrous Oxide - LN2O
- Liquid Carbon Dioxide - LCO2

#### **Range :**

MLC - 205 - B 21

MLC - 205 - B 35







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## MICRO BULK

### Advantage of Liquid Gas Pack (LGP) & Mobile Liquid Cylinder (MLC)

1. Eliminates Cylinders Multiple Handling.
2. Increasing the productivity and minimize the interruption of the production operation.
3. Space Optimization
4. Eliminates the Cylinder Control / Monitoring Activity.
5. Eliminates the contamination of Gases.
6. Reduce the risk with lower operating pressure.
7. Assured Quantity.
8. Accident Proof.
9. Uninterrupted supply of gas at user point.
10. Reduce administrative work by reducing the paper work of frequent ordering activities.

### Cost Benefit Analysis



105 Nos. Gas Cylinders = 1 No. Liquid Gas Pack (LGP)



27 Nos. Gas Cylinders = 1 No. Mobile Liquid Cylinder (MLC)



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## MICRO BULK

### LIQUID GAS PACK (LGP)



#### LIQUID GAS PACK USE FOR STORAGE OF...

- ✓ Liquid Oxygen - LOX
- ✓ Liquid Nitrogen - LIN
- ✓ Liquid Argon - LAR
- ✓ Liquid Carbon Dioxide - LCO<sub>2</sub>
- ✓ Liquid Nitrous Oxide - LNO<sub>2</sub>
- ✓ Liquified Natural Gas - LNG

#### FEATURES OF LIQUID GAS PACK (LGP) :

- ✓ Stable base & civil foundation not essential
- ✓ Digital level gauge & pressure gauge for measurement
- ✓ Frame protects on all four side
- ✓ Vaporizer mounted along with tank on frame, provides continuous gas supply
- ✓ Easy to handle for loading & unloading
- ✓ Safety device outer jacket at the top of the tank

#### Advantages of Liquid Gas Pack (LGP)

- ✓ Eliminate Cylinders Multiple Handling
- ✓ Increasing the productivity and minimize the interruption of the production operation
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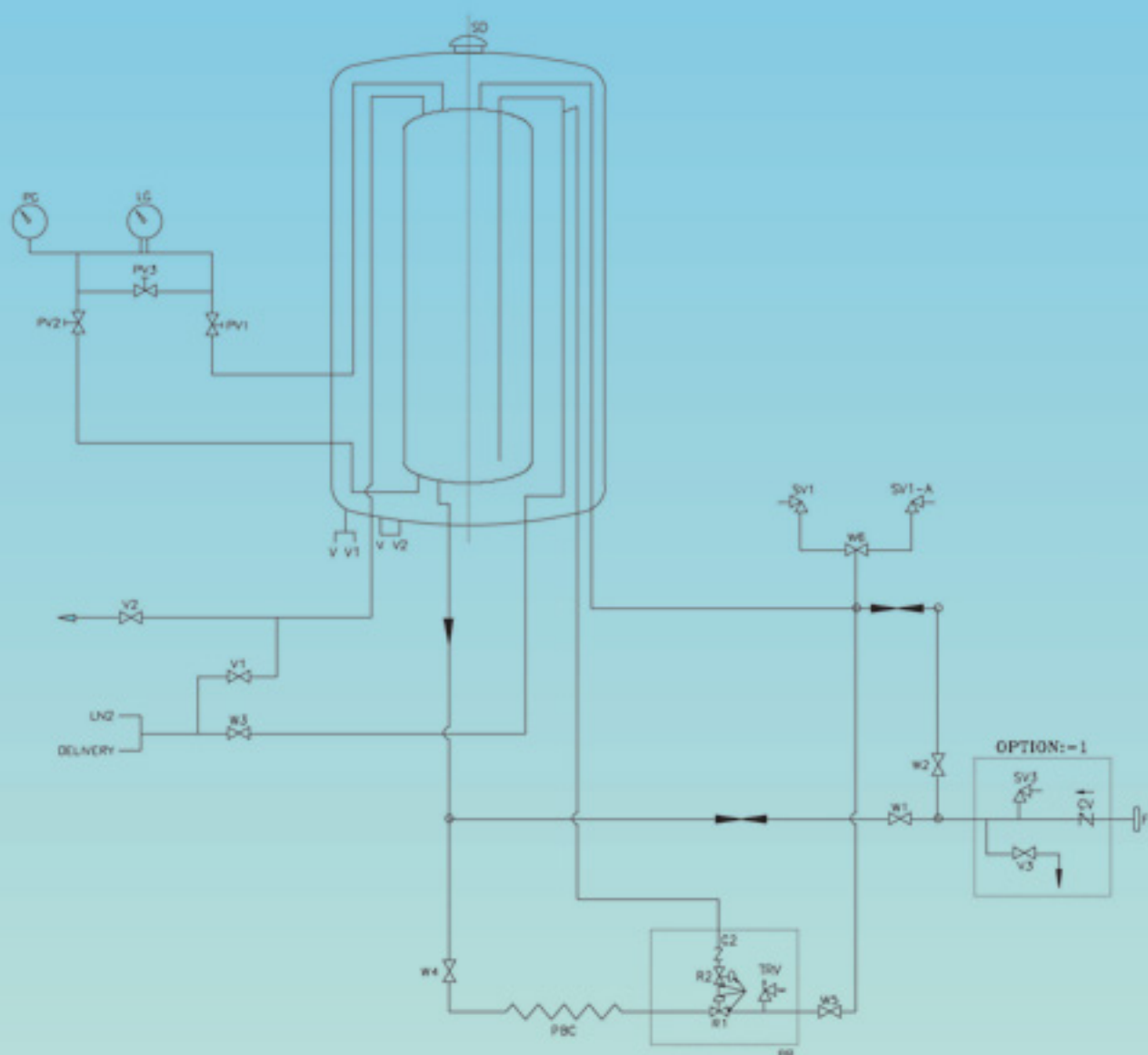




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## MICRO BULK

### LIQUID GAS PACK (LGP)



TAG NO.	DESCRIPTION
PR	THREE WAY PRESSURE REGULATOR
SD	SAFETY DEVICE OUTER VESSEL
PBC	PRESSURE BUILDING COIL
V V2	EVACUATION VALVE
V V1	VACUUM PROBE VALVE
PG	PRESSURE GAUGE
LG	DIFFERENTIAL PRESSURE TYPE INDICATOR
PV3	PRESSURE BALANCE VALVE
PV2	LEVEL GAUGE VALVE
PV1	LEVEL GAUGE VALVE
FF	FILLING FLANGE

TAG NO.	DESCRIPTION
SV1 SV1A	SAFETY RELIEF VALVE FOR INNER VESSEL
V2	OVER FLOW VALVE \ VENT VALVE
V1	GAS WITHDRAWAL VALVE
W6	FLOW DIVERTER VALVE
W5	VAPORIZER OUTLET VALVE
W4	PRESSURIZING INLET VALVE TO VAPORIZER
W3	LIQUID WITHDRAWAL VALVE
W2	UPPER FILLING VALVE
W1	LOWER FILLING VALVE



## COMPLETE TURNKEY PROJECTS AND BACKUP SYSTEMS

### Introduction

Cryogas offers complete turnkey solutions to meet customer requirements.

15 years of strong cryogenic engineering experience and 10 years in handling all kinds of single multiple and specialty gases. The Group is able to offer a variety of solutions

### Major Application

1. Fluids: Liquid Oxygen, Nitrogen, Argon, CO<sub>2</sub>, LN<sub>2</sub>O, LNG, etc.
2. Plant pack up systems
3. Cylinder filling stations including micro bulk refilling systems
4. LNG regasification stations
5. LNG micro bulk refilling stations
6. Onshore and offshore and cross country piping purging solutions
7. LNG-CNG liquefaction plants
8. Turnkey solutions for purging inerting, blanketing solutions at customer sites



**Turnkey solution schemes, turnkey projects are available on:**

1. Sale basis
2. BOO/BOOT/BOLT basis
3. Short term rental / on site hire basis





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Ar, N<sub>2</sub>O, CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, He, LNG, LPG

## COMPLETE TURNKEY PROJECTS AND BACKUP SYSTEMS

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## CRYOCOOLERS & COMPRESSORS

SUMITOMO - JAPAN



### CRYOCOOLERS

- SRDK Series Cryocoolers
- SRP Pules Tube
- GM - JT Series

### COMPRESSOR

- Selection from water-cooled & air-cooled
- Selection of air-cooled compressor between indoor-use & outdoor-use

