

CryoLinks™ Vacuum Insulated Pipe

CryoLinks™ Vacuum Insulated Pipe (VIP) is the preferred method for transporting cryogenic liquids and is unmatched in ease of installation, lead times and cost-effectiveness compared to other mechanical insulated systems. CryoLinks is designed for high-pressure applications of 500 psi and higher.

CryoWorks uses stainless steel inner and outer rigid tube/pipe in the manufacturing of our CryoLinks VIP Systems. The piping consists of a factory-fabricated inner line and outer jacket. The inner line carries the cryogenic fluid while a vacuum space between the inner and outer pipe provides insulation that minimizes heat transfer and boil-off gas (BOG). The vacuum annular space consists of a multi-layer superinsulation, internal gettering material, and High Vacuum.



Features:

- Standard line sizes range from ½" OD tube to 3" NPS pipe
- External expansion joints
- Great alternative to foam insulated copper
- Higher rated pressures compared to conventional vacuum insulated piping
- End connections can be field welded or assembled together with tube compression type fittings
- No welding or brazing required when using the tube compression type fitting
- Ideal for LN2 and LC02 Applications
- Fabricated to ASME B31.3
- Joints can be easily mechanically insulated
- Vacuum insulated flex sections available for system offsets, thermal expansion, expansion loops, flexibility, and use-point transitions.

Benefits:

- Approximately 50 times more effective than conventional foam insulation in preventing heat gain to the inner line and nearly 200 times more effective than bare copper lines.
- Extremely long-lasting and impervious to UV degradation
- Minimize space required for routing
- Minimize cool down losses
- Minimize FOD (Foreign Object Debris)

Available Accessories/Options:

- Vacuum Insulated Welded Field Can or Bayonet Ends
- Safety/Thermal Relief Assemblies
- Keepfulls/High Point Vents
- Vent Heaters
- Flex Hoses
- Emergency Shut Off Valves
- Isolation Valves
- Custom Weldments/Adapters
- Compression Fittings
- Bayonet Adapters (For future expansion)
- Insulation Kits
- Vacuum Insulated In-Line Valves
- Bronze Cryo-Valves
- Internal Low Loss Gas Traps
- Vacuum Gauges (DV-6R)
- Safety Relief Valves
- Vacuum Insulated Transfer Hoses (Connection to equipment)
- ASME Code Compliant Testing and Certification



Tube Compression Fitting Example

Tube Size - Technical Data

Tube Line Size	Internal Diameter	Outer Diameter	LN2 Heat Leak BTU/hr/ft	MAWP psi	Weight lbs/ft
½" OD	0.402	1.5" OD	0.198	1176	1.180
1" OD	0.902	2" NPS	0.351	978	1.858
1 ½" OD	1.402	2.5" NPS	0.504	569	2.472
2" OD	1.902	3" NPS	0.655	551	3.088

OD = Outer Diameter
NPS = Nominal Pipe Size

LN₂ Flow Data (Maximum recommended Flow Rate):

Tube Line Size	gpm	lpm	lbs/min
½" OD	1.60	6.06	10.8
1" OD	13.9	52.7	93.9
1 ½" OD	41.9	159	283
2" OD	95.1	360	641

Data Based on 100 Feet of Tubing and 5 Elbows while maintaining less than 5 psi friction pressure drop @ 75 psi operating pressure

Pipe Size - Technical Data

Pipe Line Size	Internal Diameter	Outer Diameter	LN2 Heat Leak BTU/hr/ft	MAWP psi	Weight lbs/ft
1" NPS	1.185"	2" NPS	0.45	1505	2.47
2" NPS	2.245"	3" NPS	0.75	819	4.63
3" NPS	3.334"	4" NPS	0.98	711	6.94

NPS = Nominal Pipe Size

LN₂ Flow Data (Maximum recommended Flow Rate):

Pipe Line Size	gpm	lpm	lbs/min
1" NPS	28.6	108.26	192.93
2" NPS	153	579.16	1032.14
3" NPS	425.9	1612.21	2873.12

Data Based on 100 Feet of Piping and 5 Elbows while maintaining less than 5 psi friction pressure drop @ 75 psi operating pressure