

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 4" 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 with tube compression type fittings.
- No welding or brazing required when using the tube compression type fitting.
- Ideal for LN2 and LCO2 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:

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



Tube Compression Fitting Example

Tube Size - Technical Data

Pipe Line Size	Internal Diameter	Outer Diameter	Heat Leak BTU/hr*ft		MAWP psi	Weight lbs/ft
			LN2	LC02		
½" OD	0.5"	1½" OD	0.158	0.073	1176	1.180
1" OD	1"	2" NPS	0.273	0.126	978	1.858
1½" OD	1.5"	2½" NPS	0.386	0.178	569	2.472
2" OD	2"	3" NPS	0.499	0.230	551	3.088

OD = Outer Diameter
 NPS = Nominal Pipe Size
 Multi-Layer Insulation (MLI) = 20

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
1½" 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	Heat Leak BTU/hr*ft		MAWP psi	Weight lbs/ft
			LN2	LC02		
1" NPS	1.31"	2" NPS	0.345	0.159	1505	2.47
2" NPS	2.37"	3" NPS	0.586	0.270	819	4.63
3" NPS	3.5"	4" NPS	0.841	0.388	711	6.94
4" NPS	4.5"	5" NPS	1.068	0.492	552	12.65

NPS = Nominal Pipe Size
 Multi-Layer Insulation (MLI) = 20

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
4" NPS	890	3369	6004.70

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