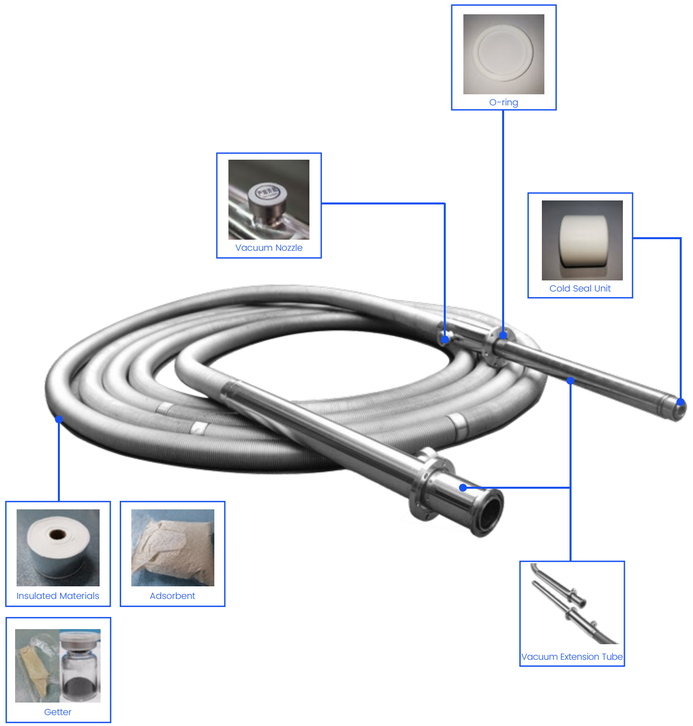
Vacuum Insulated/Jacketed Flexible Hose

The Vacuum Insulated Flexible Hose is constructed in a high vacuum and multi-layer insulated materials, and passes through a series of extremely strict technical treatments and high vacuum treatment, which is used for transferring of liquid oxygen, liquid nitrogen, liquid argon, liquid hydrogen, liquid helium, and LNG. It is as a perfect substitute for conventional piping insulation.



Main Product Parameters

Materials	Stainless Steel 300 Series
Design Temperature	-196~90℃ LH2,LHe: -270~90℃
Ambient Temperature	-50~90℃
Vacuum Leakage Rate	≤$1*10^{-10}$Pa*m^3/S
Vacuum Level before Delivery	≤0.05Pa (0.0005mbar)
Vacuum Level after Guarantee	≤0.1Pa (0.001mbar)
Vacuum Level in Cryogenic State	≤0.01Pa (0.0001mbar)
Insulated Method	High Vacuum Multi-Layer Insulation
Adsorbent and Getter	Yes
NDE	RT for Butt Weld PT for Rest of Weld
Test Pressure	1.15 Times Design Pressure
Medium	LIN, LOX, LAr, LHe, LH2, LNG

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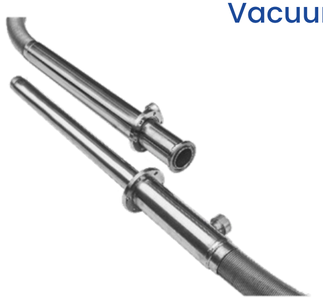
Coupling Types

Three kinds of couplings Vacuum Insulated Flexible Hose are available for customers to choose from. These couplings are mainly used for the connection between vacuum insulated pipes.

	Vacuum Bayonet Coupling(with Clamps)	Vacuum Bayonet Coupling(with Flanges)	Screw Thread Coupling	Welded Coupling
Connection Type	Clamps	Flanges and Bolts	NPT, CGA295 etc.	Weld
Insulation Type at couplings	Vacuum	Vacuum	Non	Non
On-site Insulated Treatment at couplings	Not Need	Not Need	Yes, if needed	Yes, if needed
Nominal Diameter of Inner Pipe	DN8(1/4")~DN40(1.5")	DN8(1/4")~DN80(3")	DN8(1/4")~DN15(1/2")	DN8(1/4")~DN250(10")
Design Pressure	≤10 bar	≤32 bar	≤40 bar	≤80 bar
Individual product length	It is not recommended to exceed 20 meters for a single VI hose Special customizations are not limited in length.			

Vacuum Bayonet Coupling



Bayonet with Flanges (BF)

Bayonet with Clamps (BC)

Screw Thread Coupling

Welded Coupling

Customized Coupling

The customized coupling which is on the basis of the welded coupling, any joint can be re-welded to its inner pipe, like Flange, Screw Thread or any customized joint.
The customized couplings is mainly used for connecting VI Piping to user equipment. Most of customized couplings require on-site insulation treatment.

A FLANGE is re-welded on a welded coupling

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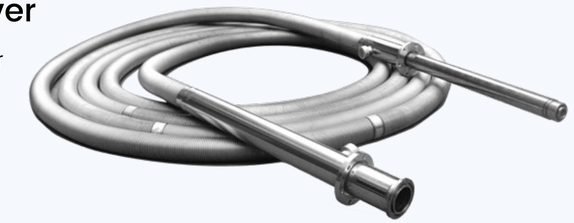
Protective Covers

In order to maintain flexibility, the wall thickness of the outer hose should not be too thick, so it is needed to install a protective cover. The Inner hose is also protected by a protective cover.

Without the Protective Cover

No protective cover will obtain a smaller bending radius



Armored Protective Cover

A stronger Protective Cover

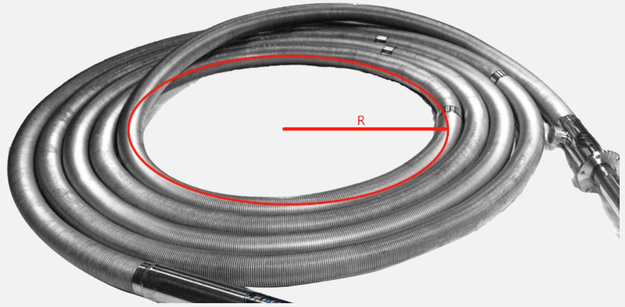
Braided Protective Cover

Large diameter VI Flexible Hose can only be selected the Braided one.

Other Data

Specification	Min. Bending Radius (R)	Weight per Meter
DN15 , 1/2"	300mm	2.5kg
DN25 , 1"	340mm	3.6kg
DN40 , 1-1/2"	375mm	5.8kg

* The weight data is only for the vacuum insulated hose part, and excluding the weight of each end joint.
* The bending radius data is with the Armored Protective Cover.



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FAQs

The Reasons of Choosing HL CRYO.

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The Scope of Supply.

The following equipment is suitable for cryogenic services.

- Vacuum Insulated/Jacketed Pipe Series
- Phase Separator/Degasser Series
- Dynamic Vacuum Pump Unit Series
- Vacuum Insulated/Jacketed Flexible Hose Series
- Vacuum Insulated Valve Series
- PLC Automatic Control System for VI Piping
- Other cryogenic support equipment related to VI piping, such as Safety Relief Valve, Filter, Heater of Venting Pipe, Pressure Control System etc.

The Main Service Areas.

- Air Separator/ Cold Box
- Aerospace Industry
- Biostorage/Biobank and Pharmaceutical
- Aluminum Extrusion
- Bulb Production
- Rare Gas
- Test Platform
- Chip: MBE and Packaging&Testing
- Liquid Hydrogen & Liquid Helium
- Motor and Engine
- Food & Beverage Production
- Rubber Tyre Production
- Receiving and Filling Station
- Research Institute Project

Getting A Quotation

Provide the following information as much detail as possible in order to get an accurate quotation quickly.

1. Industry/product application, and medium.
2. Pipe specifications and quantity, or quantity of flow.
3. Work pressure or design pressure.
4. Material of piping system.
5. If valves, phase separator and other equipment are needed, it is recommended to provide drawings.
6. Commercial terms, including currency, country/port, and the Incoterm (EXW, FOB or CIF) etc.
7. Other requirements.

- If not sure about any above information, please contact HL CRYO.

The Manufacture Standard.

ASME B31.3

The Raw Materials.

Usually, ASTM/ASME 300 Series Stainless Steel (Acid Pickling、Mechanical Polishing、Bright Annealing and Electro Polishing).

The Minimum Order.

There is no limited for minimum order.

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