



Poly-Flex

Poly-Flex heralds a new era in **polycold** hose technology, offering minimal heat leaks, top-tier safety, and exceptional durability. Its robust spiral-wrapped jacket ensures resilience in rugged Polycold Cryochiller applications. This innovation operates with either self-contained static vacuum or dynamic vacuum using external customer process vacuum.

Poly-Flex Transfer Hose

The Poly-Flex transfer hose revolutionizes hose technology by addressing core problems in traditional polycold hoses. It eliminates icing through super insulation technology. Its lightweight stainless steel construction minimizes cool-down loss, cutting energy use and cryochiller stress during system start up. Exceptional flexibility eases installation and upkeep, boasting the industry's leading bend radius. Poly-Flex stays pliable in extreme cold, mitigating rupture risks at cold operating temperature. Safety is paramount, ensured by a robust stainless steel spiral wrap that neutralizes wire hazards in competitive wire braided polycold hose.

Typical hoses are manufactured with ½" Male seal-lok or female seal-lok or KF40 clamp connection to PVD process chamber.

Applications

These hoses are used in applications involve thin film deposition process such as CVD, PVD and ALD vacuum chamber operated with polycold cryochiller.

Features and Benefits

- Vacuum insulation eliminates condensation, frosting, ice and related safety hazards
- Super insulation and proprietary chemical getters ensures long lasting vacuum integrity
- Each hose is evacuated (10^{-7} torr), helium leak checked (1×10^{-9} std cc/sec) and liquid nitrogen cold shocked tested before shipping
- Tees, elbows, bayonets and valves can be incorporated with Poly-Flex transfer hose for a customized application
- Both flexible and rigid sections can be combined as one spool
- Select hoses are stocked for immediate delivery

All Poly-Flex comes with CSM renowned customer service, from conceptual design to implementation, and are backed by a one year warranty

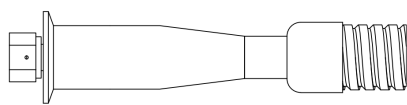
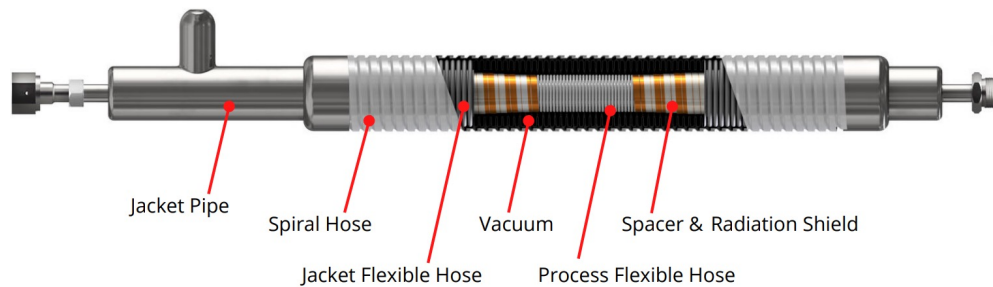


Poly-Flex application in PVD

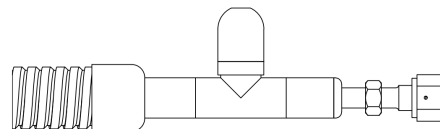
Ultra-Flex Specifications

Model	PF8	PF12
Inner Diameter (I.D.)	DN 8 5/16" (8.2 mm)	DN 12 ½" (12.1 mm)
Outer Diameter (O.D.)	DN 25 (39.0 mm)	DN 32 (49 mm)
Steady State Heat Leak	2.7 btu/hr/ft (2.6 watts/meter)	3.2 btu/hr/ft (3.0 watts/meter)
Chamber conn. Heat Leak	4.3 btu/hour (1.2 watts)	4.3 btu/hour (1.2 watts)
Max. Operating Pressure	450 psi (31.0 bar)	450 psi (31.0 bar)
Weight	0.7 lbs/ft (1.1 kg/m)	0.8 lbs/ft (1.2 kg/m)
Min. Flexible Bend Radius	8" (203 mm)	10" (254 mm)
Min. Static Bend Radius	6" (152 mm)	8" (203 mm)
Vacuum Insulation Type	Dynamic Vacuum or Static Vacuum with MLI, Absorbent and Getters	
Protective Outer Covering	SW - Spiral Wrap (Standard) RFB - Regular Flex Braid (Option)	
Material Construction	Stainless Steel Series 300	
Standard Testing	Dimensional Check He leak checked 1 x 1 0 - 9 cc/s	
Optional	Pneumatic pressure test, Vacuum retention testing, LN2 cold shock, pre-material certs., X-ray, ASME B31.3 certification, CFOS cleaning for O2 services	

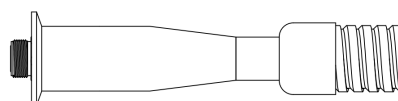
Typical Poly-Flex Transfer Hose



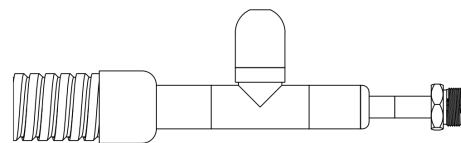
KF40 Chamber conn,
Female seal-lok ½"



Cryochiller conn,
Female seal-lok ½"



KF40 Chamber conn,
Male seal-lok ½"



Cryochiller conn,
Male seal-lok ½"