



# PolyFlex

*for Polycold*

PolyFlex 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 process vacuum.

## PolyFlex Transfer Hose

The PolyFlex 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. PolyFlex 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 male or female seal-lok or HVCR or KF40 or KF50 clamp connection to PVD process chamber.

Available as single or twin refrigerant hose within a vacuum jacket.

## 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
- Helium leak checked ( $1.0 \times 10^{-9}$  cc/s) and liquid nitrogen cold shocked tested before shipping
- Tees, elbows, bayonets and valves can be incorporated with PolyFlex transfer hose for a customized application
- Both flexible and rigid sections can be combined as one spool
- Ready stock for immediate delivery

All PolyFlex comes with CSM renowned customer service, from conceptual design to implementation, and are backed by a 1-year Vacuum and Defect Warranty.

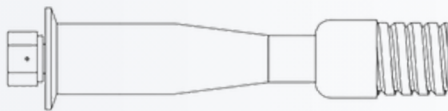
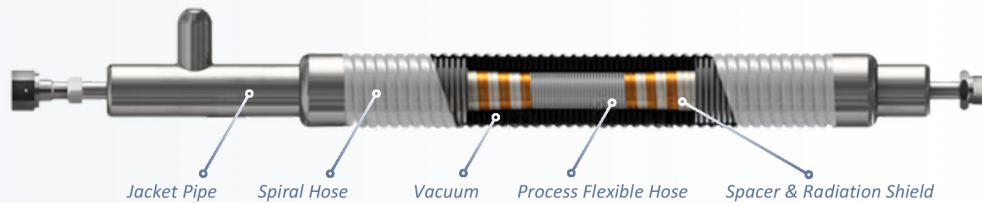


PolyFlex Application in PVD

# PolyFlex Specifications

Model	PF8	PF10	PF12	PF8-Twin
Inner Diameter	DN8 5/16" (8.2 mm)	DN10 3/8" (10 mm)	DN12 1/2" (12.1 mm)	DN8 5/16" (8.2 mm)
Outer Diameter	DN25 (39.0 mm)	DN25 (39.0 mm)	DN32 (49 mm)	DN50 (39.0 mm)
Steady State Heat Leak	2.7 BTU/hr/ft (2.6 W/m)	2.8 BTU/hr/ft (2.7 W/m)	3.2 BTU/hr/ft (3.1 W/m)	3.8 Btu/hr/ft (3.7 W/m)
Connection Heat Leak	4.3 BTU/hr (1.3 W)			
Max. Operating Pressure	450 psi (31.0 bar)			
Weight	0.7 lb/ft (1.1 kg/m)	0.7 lb/ft (1.1 kg/m)	0.8 lb/ft (1.2 kg/m)	0.7 lb/ft (1.1 kg/m)
Min. Bend Radius - Flexible - Static	8" (203 mm) 6" (152 mm)	8" (203 mm) 6" (152 mm)	10" (254 mm) 8" (203 mm)	15" (375 mm) 10" (250 mm)
Insulation	Static / Dynamic			
Protective Outer Covering (Standard / Option)	SW - Spiral Wrap / RFB - Regular Flex Braid			
Standard Testing	Dimensional Check He Leak Test @ 1.0 x 10 <sup>-9</sup> cc/s			
Optional	Pneumatic Pressure Test, Vacuum Retention Testing, LN <sub>2</sub> Cold Shock, Pre-Material Certs., X-ray Inspection, ASME B31.3 Certification, CFOS Cleaning for O <sub>2</sub> Services, RPTSTD-8070-0001			

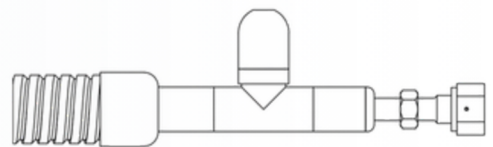
## Typical PolyFlex Transfer Hose - Single



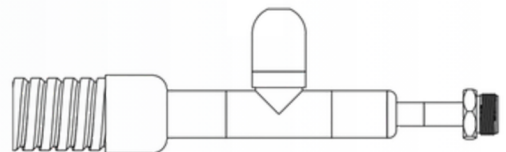
KF40 / KF50 Chamber conn,  
Female seal-lok 1/2" or 1/4" HVCR



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