



Poly-Flex

for Polycold

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

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

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

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 x10⁻⁹ 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



Poly-Flex application in PVD

Poly-Flex Specifications

| Model | PF8 | PF12 | PF8-Twin |
|---------------------------|---|------------------------------------|------------------------------------|
| Inner Diameter (I.D.) | DN 8 5/16" (8.2 mm) | DN 12 ½" (12.1 mm) | DN 8 5/16" (8.2 mm) |
| Outer Diameter (O.D.) | DN 25 (39.0 mm) | DN 32 (49 mm) | DN 50 (39.0 mm) |
| Steady State Heat Leak | 2.7 btu/hr/ft (2.6 watts/meter) | 3.2 btu/hr/ft (3.0 watts/meter) | 3.8 btu/hr/ft (3.6 watts/meter) |
| Chamber conn. Heat Leak | 4.3 btu/hour (1.2 watts) | 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) | 450 psi (31.0 bar) |
| Weight | 0.7 lbs/ft (1.1 kg/m) | 0.8 lbs/ft (1.2 kg/m) | 0.7 lbs/ft (2.1 kg/m) |
| Min. Flexible Bend Radius | 8" (203 mm) | 10" (254 mm) | 15" (375 mm) |
| Min. Static Bend Radius | 6" (152 mm) | 8" (203 mm) | 10" (250 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 - Single

