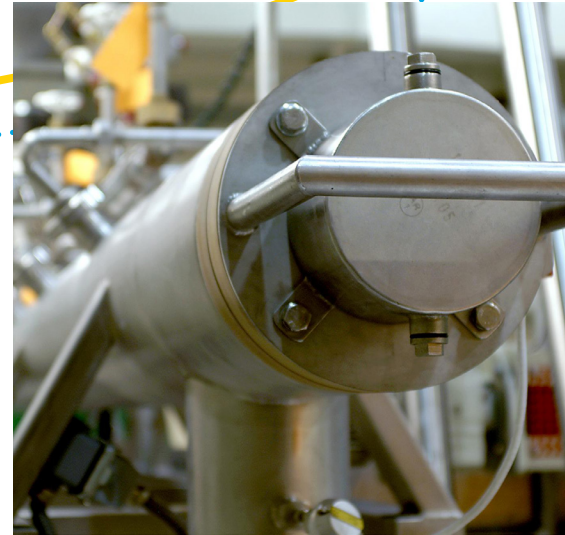


PolarFit[®] cryogenic cooling conveyor



Choosing the right cooling conveyor for the job is critical to your cryogenics operation. The correct size and type of conveyor translates into a more efficient process. And a more efficient process saves you money. We can help make your choice easier — Air Products offers a selection of cooling conveyors backed by our experience to maximize the performance of your cryogenic grinding system.



Cooling increases yields for lower operating costs

To grind efficiently, your feed material must be completely brittle prior to actual grinding. Using a cooling conveyor with liquid nitrogen to achieve embrittlement can result in consistently higher yields of particles in your target size range and, ultimately, reduced operating costs. Cooling conveyors transfer the feed from the hopper to the grinding mill. Liquid nitrogen is sprayed on the material as it moves along the conveyor, resulting in a high heat transfer coefficient on the pellet surface. This rapid cooling makes the material brittle and more easily crushed by a variety of impact-type mills.

Our PolarFit cooling conveyors are ideal for the cryogenic size reduction of:

- Hot melt adhesives
- Pharmaceuticals
- Pigments and powder coating materials
- Rubber and plastics
- Spices and other food products
- Thermoplastic elastomers
- Waxes

The choice is yours

Whether you're looking for a complete cryogenic fine grinding system or want to enhance your current mill's performance with the addition of a cooling conveyor, Air Products has the hardware and — more importantly — the knowledge you need to help you get the results you want. We offer both rectangular foam-insulated and cylindrical vacuum-insulated configurations in various sizes to meet your operational and performance requirements.

Foam-insulated cooling conveyor for efficient, frequent product changes

Our foam-insulated cooling conveyor is ideal for applications that require frequent material changes. Its heat exchanger opens and closes easily for efficient cleaning, and the rectangular design provides a small installed footprint. Additional features and benefits:

- E-Z hinge design features hassle-free screw removal for cleanup and material change
- Multiple locations for thermocouples increase installation flexibility
- Hinged front door allows rapid warm-up
- Adjustable spray bar allows different liquid nitrogen flow rates
- Efficient operation optimizes liquid nitrogen efficiency
- Available in 2-ft. (610 mm) and 7-ft. (2135 mm) lengths

Vacuum-insulated cooling conveyor for lower operating costs

Our vacuum-insulated cylindrical conveyor is designed for maximum operating efficiency. The ability to spray from single or multiple injection nozzles increases flexibility for a wide range of materials and applications, and the conveyor's shallow flight design ensures even material exposure to the cooling liquid nitrogen for optimum heat exchange.

Additional features and benefits:

- Preplumbing for co-current or counter-current removal of cold heat-exchanged gas provides greater versatility to suit your application
- Variable flight design permits mixing of the feed solids
- Easy installation/removal of screw allows for fast changeover and easy cleaning

The Air Products advantage

When you rely on Air Products for a solution to your grinding requirements, you gain access to the decades of experience in operations, liquid nitrogen freezing and cooling that you would expect from a world leader in cryogenic grinding.

At our trial facilities around the world, we can run your product on production-scale equipment to help determine the feasibility of using cryogenics in your process.

Our applications engineers can help match the right system with your grinding specifications. We could offer you a complete, turnkey system that includes mills, cooling conveyors and liquid nitrogen equipment and supply or individual components.

For more information, please contact us at:

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Vacuum-insulated cooling conveyor sizes available

Model Type	Screw Diameter	Overall Diameter	Overall Length	Length Inlet to Outlet	Height Inlet-Outlet Flange	Approx Weight
E-100	4 in (100 mm)	8.5 in (219 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24 in (600 mm)	600 lbs (270 kg)
E-150	6 in (150 mm)	10 in (256 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24 in (600 mm)	660 lbs (300 kg)
E-200	8 in (200 mm)	12 in (324 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24 in (600 mm)	770 lbs (350 kg)
E-300	12 in (300 mm)	16 in (406 mm)	13 ft (4000 mm)	10 ft (3000 mm)	24 in (600 mm)	882 lbs (400 kg)
E-300 XL	12 in (300 mm)	16 in (406 mm)	23 ft (7000 mm)	20 ft (6000 mm)	28 in (700 mm)	1433 lbs (650 kg)



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