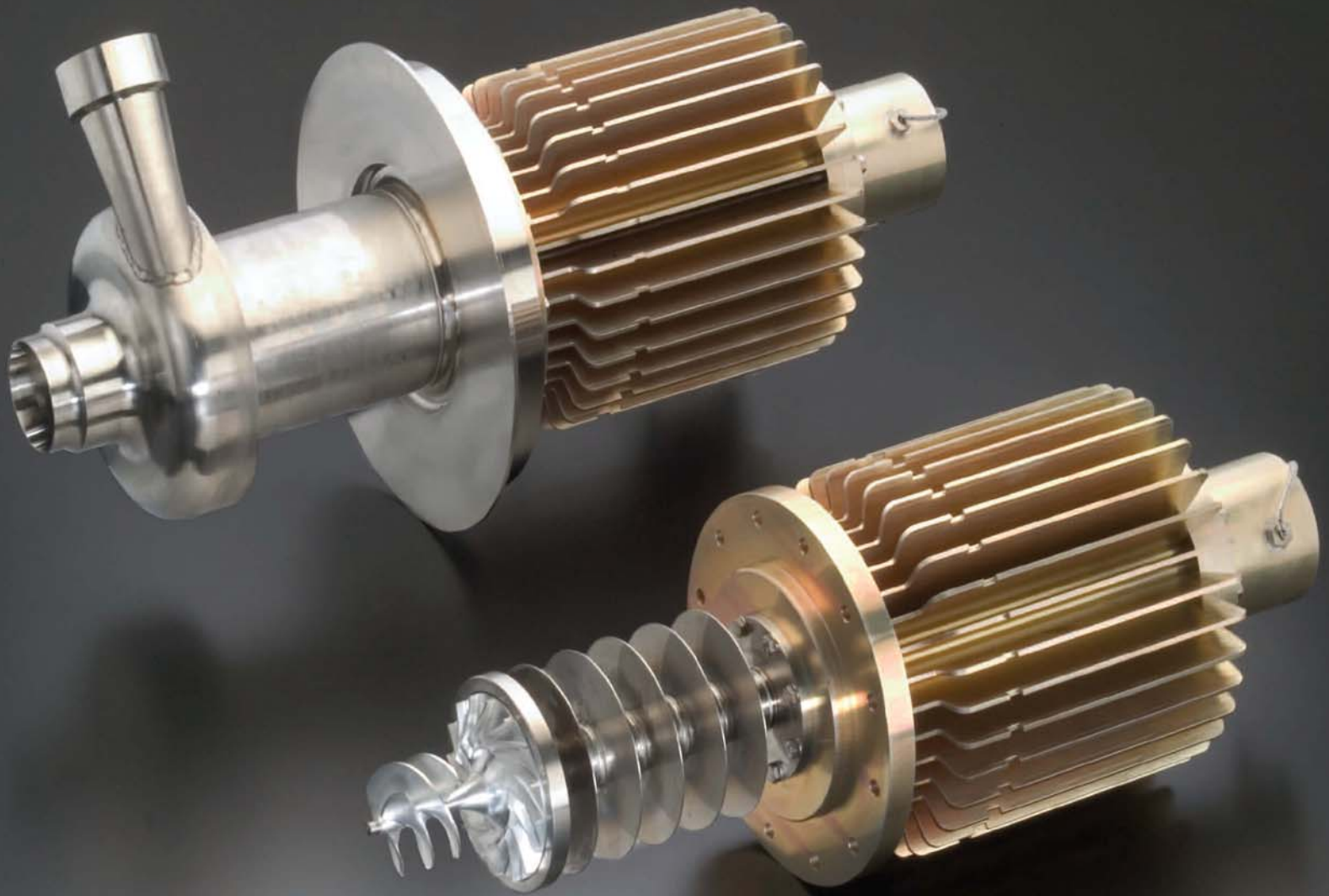


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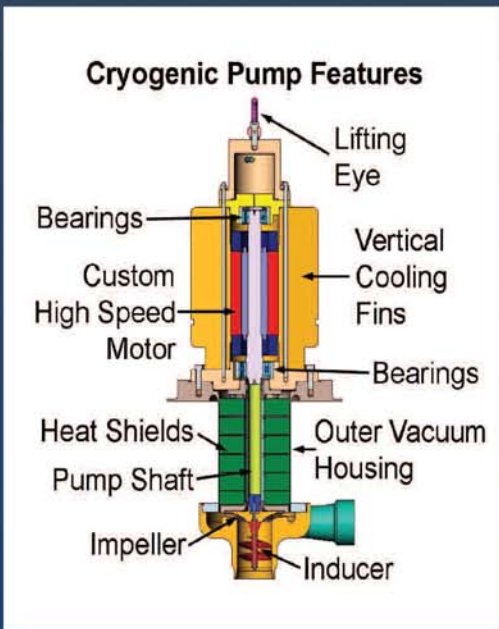
Design & Manufacture of Specialty Cryogenic Machinery



Solutions Since 1966



For more than thirty years Barber-Nichols Inc. (BNI) has been manufacturing the world's premier, custom engineered, cryogenic blowers, circulators, and pumps for use at temperatures down to 2.6 Kelvin. These units minimize heat leak, optimize system performance, and are highly efficient, hermetically sealed, and easy to service. For the end user, these features provide a low total cost of ownership. Please contact Barber-Nichols with your requirements and allow us to design an optimized solution.



- Thin-Walled **Pump Shafts** minimize conductive motor heat transfer into the system
- Anti-Convection / Radiation **Heat Shields** minimize heat transfer into the system
- Hermetically sealed machinery eliminates mechanical seals, prevents leaks, and reduces maintenance
- Optimized **Inducers** minimize NPSH requirements
- **Custom High-Speed Motors** & Variable Frequency Drives provide a wide performance range optimizing hydraulic efficiency
- **Outer Vacuum Housings** preserve cold box vacuum integrity during pump maintenance

Cryogenic Fluids Include: Helium, Hydrogen, Neon, Nitrogen, Argon, Oxygen, Methane, Krypton, Xenon & More



Long Shaft & Vacuum Housing Pumps

Barber-Nichols' long shaft and vacuum housing pumps are the best choice when heat leak minimization and cryogen containment are top priorities. Long shaft pumps can be configured for open and piped inlet applications. Additionally, vacuum housing pumps are specifically designed for cold box installations; they allow the pump to be removed for service while preserving the integrity of the cold box vacuum.



Select Applications Include:

- Circulation of Liquid Nitrogen (78 K) for the Cooling of Silicon Crystals in Monochromators – More Than 200 Pumps Currently in Operation
- Circulation of Liquid Helium (4 K) for the Cooling of Superconducting Magnets
- Circulation of Liquid Nitrogen (65-80 K) for the Cooling of High-Temperature Superconducting Electric Power Transmission Cables



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Liquid Transfer Pumps & Gas Circulators



Barber-Nichols' liquid transfer pumps and gas circulators are the best choice when compact size and ease of installation are top priorities. Direct drives eliminate the need for couplings and maximize reliability. Additionally, submersible pumps optimize motor and bearing life by using the process fluid for cooling and lubrication. And finally, gas circulators and non-submersible pumps are hermetically sealed which eliminates mechanical seals and maximizes reliability and process fluid containment.

Select Applications Include:

- Circulation of Cryogenic Helium Gas for the Cooling of Superconducting Magnets
- Circulation of Hot (420 K) & Cold (90 K) Nitrogen Gas for Satellite Test Chambers – More Than 200 Units Currently in Operation
- Transfer of Liquid Oxygen (90 K) for Launch Vehicles
- Transfer of Liquefied Natural Gas (110 K) for Fleet Vehicles

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