

OUR CRYOGENIC EXPERTISE FOR ENERGY

ABSOLUT SYSTEM, DESIGNER OF YOUR CRYOGENIC SYSTEMS

Absolut System is a technology development company that has been using its cryogenic expertise to supply innovative, made-to-measure cryogenic and thermal equipment on an international scale since 2010. Absolut System has the core competencies with the design, the development, the manufacturing and the integration of the cryogenic system and key components:

- + All our off-the-shelf turbomachinery products like cryogenic circulation fans
- + Our cryocooler providing cold power from 120K down to 1,2K
- + Our Reverse Turbo-Brayton in development for higher cold power
- + Our Hydrogen liquefier & Liquid Hydrogen products

Absolut System covers a wide field of activity: industry, laboratories, research programs, aeronautics, and space.



ABSOLUT SYSTEM, AN INNOVATIVE MANUFACTURER IN THE DECARBONIZATION OF ENERGIES

Absolut System uses its cryogenic expertise to develop innovative energy solutions to decarbonize the production, distribution and use of energy.



OUR TURBOMACHINERY

Absolut System draws on 30 years of turbomachinery design expertise utilizing fluid bearings (non-contact technology).

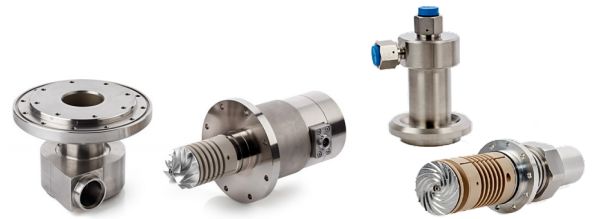
A turbomachinery transfers energy between a rotating part, called a rotor, and a fluid. Absolut System supplies motor-compressors and turbo-alternators specifically designed for applications at cryogenic temperatures (<120 K).

Absolut System designs and masters the technologies to optimize the performance of its turbomachinery:

- + Hydraulic & aerodynamic design ;
- + Mechanical & dynamic behaviour
- + Design of electrical motor
- + Use of Hydrodynamic gas bearings for long time applications



- + Use of Pulse Tube & Joule-Thomson cryocoolers to cover temperature down to 1,4K
- + Use of Gifford McMahon cold heads to cover temperature domain from 15K to 120K



Large (120K) & small (10K) cryogenic circulator fan

Our advanced technologies make our compressors, pumps, circulators and turbines highly reliable and efficient systems, even in the most demanding environments.

OUR HELIUM LOOPS AND CRYOCOOLERS

Absolut System has a huge experience in cryocooler system's integration

We are developing cryogenic cooling configurations using closed-loop Helium in the 2 K to 300 K range. Our teams of engineers design, manufacture, integrate and test the cryogenic systems. The configuration is defined to cover the power at the temperature required by the customer.

About 220 cryocoolers already delivered!

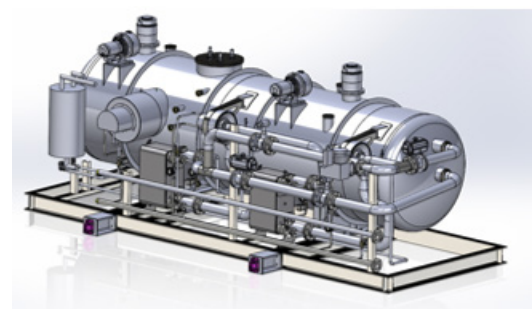
OUR REVERSE TURBO-BRAYTON: CRYOCOOL1000

Absolut Hydrogen uses Absolut System's cryogenic expertise to develop a modular Turbo-Brayton system to increase the delivered cold power.

Absolut Hydrogen is developing a cryocooler Turbo-Brayton with a cold power of power of 1kW @ 20 K and with its own Absolut System turbomachinery.

Features and highlights:

- + Hydrodynamic gas bearings low maintenance
- + Compatible with life expectancy requirements in excess of 10 years
- + Vibration-free below 1 kHz: No vibration-cancelling electronics or damping structure required
- + Possible thermal decoupling between the application and the cryocooler
- + The system unit is all integrated (except for the electrical cabinet) on a frame to ease transport and installation.



Roadmap CRYOCOOL1000

- + Turbomachinery validation tests: Spring 2024
- + System validation tests: Summer 2024
- + Lead time ~ 18 months

To know more, visit our website: absolut-hydrogen.com