DISTRIBUTION PRODUCTS
Industrial and medical gases
The Cryostar Group

Specialising in equipment and expertise for industrial gas, LNG, hydrocarbons and clean energy, Cryostar is an international company exporting more than 90% of its products and serving customers worldwide.

Founded in 1966, Cryostar is present on all continents, supported by its business centres and subsidiaries. Today the company combines the resources and competencies of a local network with decentralised, customer facing teams and its management and research headquarters in France.

Cryostar delivers pumps, turbines, compressors, heat exchangers, automatic filling and refuelling stations, natural gas liquefaction/regasification plants and power plants to customers with the most demanding requirements. Cryostar’s innovative solutions have a proven track record of improving customers’ process performance.

Cryostar has always been at the forefront of cryogenic technology. In 1967, it was the first company in Europe to produce cryogenic distribution pumps for liquefied air gases.

It is in this spirit of consistently improving customer service that Cryostar has created its Distribution Products line.

Think global, act local

To stay close to its customers around the globe, Cryostar has established several Business & Service Centres and collaborates with experienced local agents and distributors.
**Safety**

All parts are cleaned for oxygen use according to IGC standards.

Degreasing equipment used for this purpose are safe for operators.

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**High performance test facility**

Each Cryostar pump is subject to a performance test with liquid nitrogen using Cryostar’s high-technology test facility. Cryostar provides a test report together with its instruction and operating manual, offering customers guaranteed performance.

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**Quality**

Cryostar complies with guidelines such as the IGC 11/82 code and the following standards:

- ISO 9001-2000 + ISO 14001
- H & H1 modules for PED 97/23/CE
- ATEX for equipment operating in explosive area
- IECEX
- UL & NFPA
- GOST-R and ROSTECHNADZOR (RTN) permit
- Compliance with HPGSL or KHPGSL
TRANSFER PUMPS

Direct coupled pumps

GBSD/CBSL: Truck mounted pump featuring a high speed motor driven by frequency converter or high frequency generator. Typically used for medium and high pressure transfer.

CO, CBSD and CS: Ground or truck mounted pump with fixed or variable speed motor. Typically used for low pressure transfer.

Gearbox driven pumps

GBS/CBS: Ground or truck mounted pump driven by a gearbox with fixed speed motor. Typically used for medium or high pressure transfer.

Submerged motor pumps

VS: Ground or truck mounted sealless pump with fixed or variable speed submerged motor. Typically used for LCO₂ and LNG transfer.

Submerged pumps

Subtran: Ground or truck mounted two-stage submerged pump with variable speed motor. The Subtran is fitted into a sump and requires a frequency converter. Typically used for micro bulk delivery and LNG refuelling stations.

Hydraulic direct coupled pumps

CBSHD or CSH: Truck mounted pump driven by a hydraulic motor. Typically used for medium and high pressure transfer.

Hydraulic gearbox pumps

CBSH: Truck mounted pump coupled to a gearbox driven by a hydraulic motor. Typically used for high pressure transfer.
CRYOGENIC DISTRIBUTION PUMPS - Industrial and Medical Gases

TRANSFER PUMPS

Flow Chart

Medium / high pressure for road tanker unloading,
Stationary tank filling or back-up

Performance curves are not exhaustive and are provided for information only.
Please consult us for an accurate sizing.

The designation of the curves shows the number of stages, the diameter and the tip width of the impeller in mm
(ex: 2/155/4.5 => 2 stage pump 155mm impeller and 4.5mm tip width)

Low pressure for road tanker filling, stationary transfer
Cryostar Design

Cryostar uses powerful tools including 3D conception software and final element analysis (FEA) in its design process. Cryostar manufactures its centrifugal pumps using the most advanced methods such as lost wax casting for its closed impellers. All rotating parts are balanced individually and are fully oxygen compatible (tin bronze, stainless steel, monel).

Cryostar’s whole pump range is equipped with our renowned composite mechanical seal, which provides an extended lifetime three to four times longer than the commonly used carbon rings. Other types of seals are available such as the Cryostar Dry Gas Seal, which also offers an extended lifetime.
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TRANSFER PUMPS

Stationary systems

Full skidded centrifugal pump mounted on a rigid base frame with electric control panel and all required accessories for safe on-site loading/unloading.

Available in standard or customized execution according to customer requirements.

Mobile systems

Cryostar offers pumping solutions for any kind of mobile tanker configuration:

**PLUG’IN**: Centrifugal pump system for mobile tankers with electric control panel powered through customer on site electrical network

**HYTRAN**: Autonomous centrifugal pump system with hydraulic motor for road tankers powered through truck hydraulic system.

**MIXTRAN/LECTRAN**: Autonomous centrifugal pump system for road tankers powered through a generator coupled with truck engine PTO.

**HYTRAN**: Autonomous centrifugal pump system with hydraulic motor for road tankers powered through truck hydraulic system.
Reciprocating pumps are used for filling buffer tanks and gas cylinders. These pumps operate at very high pressure with a minimum NPSH requirement. They also benefit from extended life and innovative design.

**PPC**: Reciprocating pump typically used for LCO₂ and LN₂O cylinder filling.

**MRP**: Oil lubricated reciprocating pump typically used for 300bar cylinder filling.

**HPP**: Heavy duty oil lubricated reciprocating pump typically used for oil & natural gas well service, process back-up or LCO₂ sequestration.

**LXR**: Reciprocating pump typically used for 200bar cylinder filling.

**GSV**: Oil lubricated reciprocating pump typically used for process back-up, “tube filling” or LCO₂ sequestration.

**SDPD**: Reciprocating pump typically used for 200bar cylinder filling.

**LDPD**: Reciprocating pump typically used for process back-up or LCO₂ sequestration.

**PD 3000**: Vertical reciprocating pump typically used for 300bar cylinder filling.
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Reciprocating Pumps

Performance diagrams

Conventional or thermosyphon installation

★ Pump with -K connection for Conventional Tanks

★ Pump with -T connection for Thermosyphon Tanks
Customized systems

Thanks to its experience and strong engineering capability Cryostar is able to supply complete package for customer installed gas supply systems.

Offering the possibility of an advanced PLC management, Cryostar customized systems can be designed for mobile cylinder filling station or for various industrial processes such as laser cutting, polymer injection, testing facilities or CO₂ sequestration.

Turnkey high pressure cylinder filling stations

Based on its wide market experience, Cryostar Automation provides total solutions for industrial and medical cylinder filling plants. These include:

- filling valve skids
- buffer skids
- manifolds
- power and control panels
- complete software package
- traceability / remote monitoring
What we offer the world of Cryogenics

**Process equipment:** Throughout its history, Cryostar has always been a pioneer in serving the air separation plants industry, including multi stage vertical pumps, oil or generator loaded expanders etc.

**Distribution equipment:** Centrifugal and reciprocating pumps, cylinder filling and gas supply systems, LNG/LCNG/LH2 fuelling stations, etc.

**Lo-C - clean energy:** Cryostar’s LoC product range was set up in response to an increasing demand for clean and carbon free energy generation. It covers a variety of applications such as pressure let down, geothermal plants, waste heat and natural gas liquefaction.

**LNG ship:** Cryostar is the only supplier of combined cryogenic machinery for LNG carriers cargo handling systems, i.e. boil-off gas compressors, gas heaters and vaporizers and on board re-liquefaction plants.

★★★ Contact us: sales@cryostar.com ★★★

Service

Customer service is at the heart of Cryostar. Our company offers a wide range of high quality services designed specifically to provide our customers with expert knowledge and skills starting at the very first contact. This ensures that we provide the optimal solution in terms of efficiency, safety and long-term cost effectiveness before, during and after the sale.

**Before:** Thousands of hours have been invested to ensure Cryostar is at the cutting edge of technology, setting the standards of the future. Behind this is a group of highly qualified, experienced engineers, exploiting advanced computer technology and testing equipment to ensure Cryostar is a byword for quality and safety.

**During:** Cryostar owns the world’s most sophisticated in-house test stand for pumps and turbines.

**After:** Spare-parts, in-house repairs, training sessions, consulting and on-site services.

★★★ Contact us: CryostarCustomerService@cryostar.com ★★★

Training

Cryostar’s training centre has a highly qualified staff of engineers, travelling around the globe to customer sites or business centres, where they train equipment users to get the most out of Cryostar technologies.

★★★ Contact us: CryostarTrainingCenter@cryostar.com ★★★
CRYOSTAR SAS
ZI - BP 48
68320 Hésingue
France
info@cryostar.com

CRYOSTAR Automation
Saint Julien d’Empare
12700 Capdenac
France
info@cryostar.com

CRYOSTAR Brazil
Av. Santo Amaro, 2820-Brooklin
São Paulo - SP
CEP 04555-000
Brasil
brazil@cryostar.com

CRYOSTAR China
Building 2, NO. 10,
Kangzhong Road
Kangqiao Town
PRC - 310015 HANGZHOU
china@cryostar.com

CRYOSTAR Singapore
203 Henderson Road
BLK 8F10-09
Henderson Industrial park
5(159546) - Singapore
singapore@cryostar.com

CRYOSTAR UK
Kea Park Close
Hellaby, Rotherham
South Yorkshire S66 8LB - UK
uk@cryostar.com

CRYOSTAR USA East
5897 Colony Drive
Bethlehem
PA 18017 USA
usa@cryostar.com

CRYOSTAR USA West
13117 Meyer Road
Whittier
CA 90605
usa@cryostar.com

Cyrostar USA - Houston Office
5909 West Loop South,
Suite 220
Bellaire, TX 77401
Phone: +1 (713) 661-6000
Fax: +1 (713) 661-6075