CRYOGENIC INDUSTRIES

FrostByte

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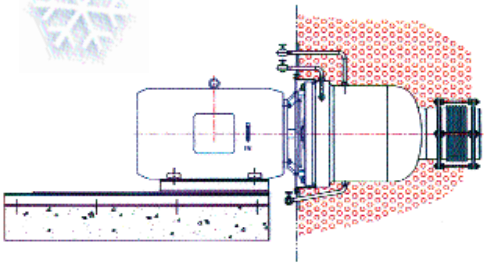
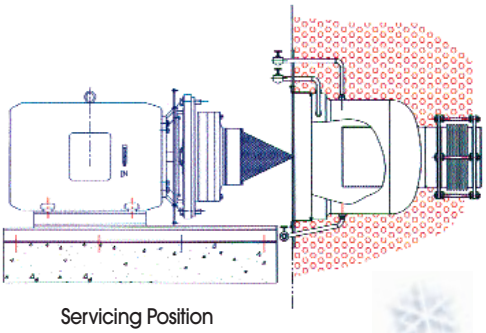
ACD launches new "cold box" pump line

ACD officially launched its new "cold box" pump product line in March with multiple presentations to the major industrial gas companies worldwide. The new pump line meets the growing demand for higher, larger flow rates and moderate/medium head capacities.

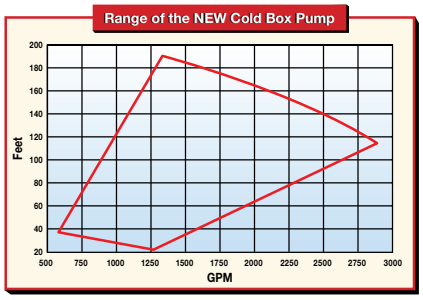
The "cold box" pump line features a back-pull-out design where the motor and all moving centrifugal parts can be easily removed for maintenance and service without disturbing any of the fixed plumbing or insulation in the cold box. The back-pull-out design or "cartridge" style is similar to ACD's turbo-expander designs which allow for easy and quick access to the rotating parts for periodic and routine service.

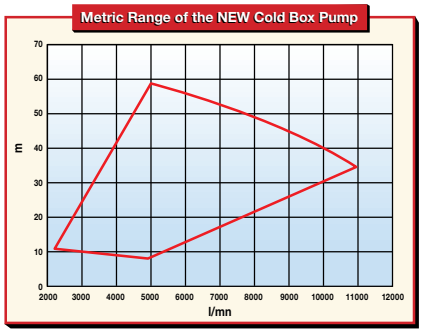


Working Position



Servicing Position





The benefits of the "cold box" pump line primarily focus on reliability, efficiency, and serviceability. Because the plumbing is not disturbed for routine maintenance or service, all flange connections can be welded (diffuser and pump flanges are stainless steel), eliminating potential leaks and unscheduled repairs or downtime. The suction strainer is not installed between flanges in the suction line, but rather as part of the pump itself inside the collector, and it is easily removed for cleaning without breaking flange connections or disturbing the insulation. Special flex sections included with the pump absorb and limit piping displacement caused by contraction and expansion, allow for simplified piping installation arrangements, and reduce piping forces applied on the pump.

The "cold box" pump uses a diffuser and collector versus the traditional volute design. The design provides higher efficiencies which reduce operating costs. The "cold box" pump achieves up to 82% efficiency which is higher than traditional process pump installations. Life cycle and operating costs are reduced without compromising performance and/or reliability.

Servicing the "cold box" pump is accomplished by removing the mounting bolts and pulling out the motor and pump cartridge, which are placed on mounting tracks. The piping and insulation are not disturbed or broken and remain in place. Once the cartridge is removed, the standby pump can be quickly installed to minimize downtime or, for routine service, the pump can be sent to an authorized ACD service center and quickly returned and reinstalled.

For more information or to arrange a technical presentation, contact J.C. Milano at ACD, jcmilano@acdcom.com.

Inside This Issue

New pumping system ideas from Cryopump

Cryopump AG, headquartered in Aesch (Basel), Switzerland, has developed two innovations in pumping systems for the distribution of industrial gases.

The first is an improvement to the traditional pump system used on road tankers. A number of industrial gas suppliers wanted to have greater control over the flow rate and pressure at which cryogenic fluids are transferred from the road tanker to their customers' tanks. Cryopump developed a control system that makes use of a variable frequency drive (frequency inverter) mounted on board the road tanker. The variable frequency drive is rugged enough to withstand the vibrations encountered in normal road tanker operation. It can be programmed to control the pump within the appropriate operating limits, thereby reducing the possibility of damage to the pump from incorrect operation.

The second Cryopump innovation is the development of a transportable pump/vaporizer system for cylinder filling. (See Figures 1 and 2.) This package includes Cryopump's unique NOVA pump controls, including a variable frequency drive. Both the pump and the ambient vaporizer are sized to suit the customer's flow and pressure requirements. The entire system is enclosed in a rugged aluminum frame that can be lifted by crane or forklift onto a truck for easy transport.

Thanks to the use of a pressure switch (PI) in combination with the frequency drive, the filling process can be adapted automatically to the size of the connected set of cylinders. (See Figure 3.) The process occurs in the shortest time possible and, as a result, the danger of overheating the cylinders is avoided. Furthermore, the used energy for the filling process can be reduced with that system up to 30%. This lowers the cost for the cylinder filling significantly.

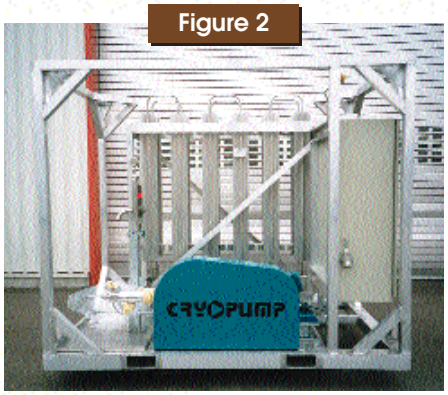
The customers who have purchased this system wanted a reliable high-pressure cylinder filling system that could be relocated. In some cases, the system is installed in advance of a permanent cylinder filling system. In other cases, Cryopump's customers determined that it would be more cost effective to fill cylinders at the end users' sites.

For more information, contact Walter Eggs at Cryopump AG, walter.eggs@cryopump.com.

Figure 1

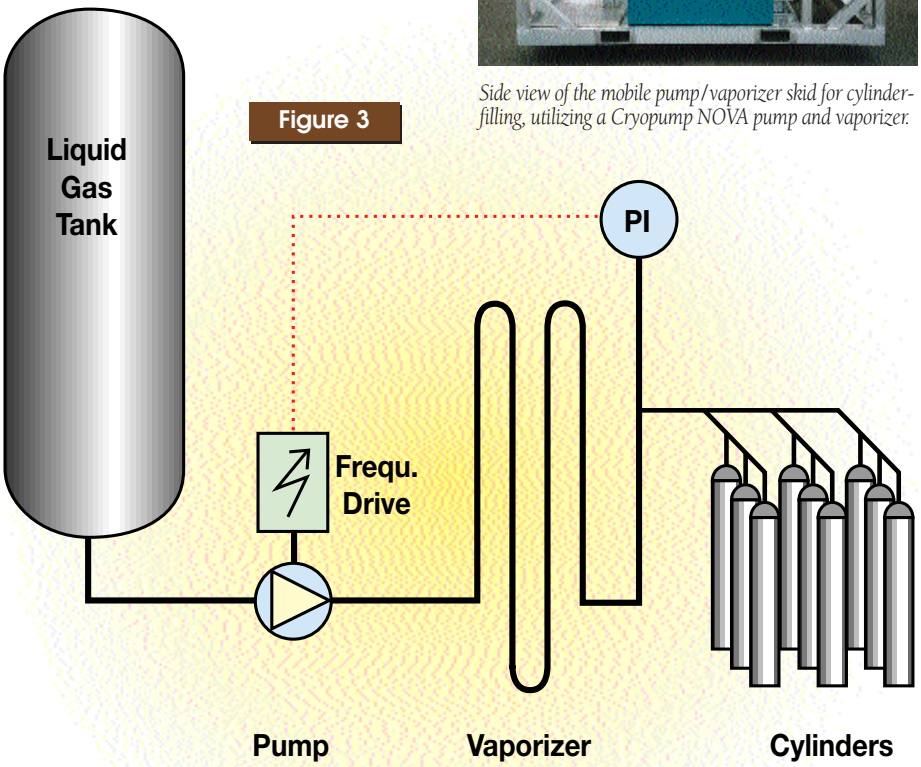
The electrical control cabinet of the pump/vaporizer skid.

Figure 2



Side view of the mobile pump/vaporizer skid for cylinder-filling, utilizing a Cryopump NOVA pump and vaporizer.

Figure 3



Vaporizer workshops teach basics of selection, operation

Cryoquip is offering free vaporizer workshops to its customers. Held at the customer's site, the workshops are typically one-day classroom sessions that focus on the different types of vaporizers available, how they work, and how to select the right one based on factors such as geography, reliability, and cost. The sessions are interactive and participants are encouraged to ask questions in order to get the most personalized information. Each participant also receives a comprehensive workbook that includes valuable reference information.

According to Patrick Billman, Cryoquip Technical Sales Manager, the workshops are an ideal way to reach a large amount of people in a small amount of time.

"Recently there has been a major amount of flux in terms of positions at various companies, bringing many new faces and many new people. As a result, the experience level is not what it used to be," he said. "Our intent is to bring our expertise to the people who need it, and the workshops are a perfect solution."

BOC in Guildford and Praxair Tonnawanda are two companies that have taken advantage of the new offering. Billman said he expects others to follow suit.

For more information, contact Patrick Billman at billp@cryoquip.com.

Cryogenic Industries Service Organization Pump Training Workshop Schedule

June 9 & 10 and Oct 13 & 14

CryoAtlanta, Inc.
College Park, GA USA
Contact: Tom Farmer
Phone: 888-217-9355 (USA only)
Phone: +1 770-909-0291
Fax: +1 770-909-0694
tfarmer@bellsouth.net

Aug 11 & 12

CryoCal, Inc.
Santa Ana, CA USA
Contact: Mike Coco
Phone: +1 949-724-8636
Fax: +1 714-641-1921
cryocal@ix.netcom.com

Aug 24 & 26 and Oct 26, 27 & 28

Cryogenic Industries SDN BHD
Selangor, Malaysia
Contact: Jim Estes
Phone: +60 (3) 365-4801, 4802
Fax: +60 (3) 365-4798
jestes@pc.jaring.my

Sept 15 & 16

Pittsburgh Cryogenic Services, Inc.
Imperial, PA USA
Contact: Carl Henningson
Phone: 800-327-6461 (USA only)
Phone: +1 724-695-1910
Fax: +1 724-695-1926
pittcryo@pulsenet.com

Cryoquip–Malaysia adds high-pressure ambient vaporizers to its product line

Cryoquip–Malaysia has expanded its manufacturing product line to include high-pressure ambient vaporizers. The high-pressure ambient vaporizer produces higher flow rates with pressure readings up to 10,000 psi, and can be used for high-pressure cylinder filling applications.

"With this latest development, Cryoquip–Malaysia is in a position to offer both low-pressure and high-pressure ambient vaporizers to customers in the Pacific Rim," said A.C. Chan, General Manager of Cryoquip–Malaysia.

The high-pressure ambient vaporizer has two key characteristics that enable it to achieve a higher throughput than low-pressure vaporizers. The product's innovative design features a stainless steel tube that is surrounded by an aluminum extrusion. The tubing, which is stronger than the aluminum tubing found in low-pressure vaporizers, makes it possible for liquids to pass through it in greater amounts and at higher pressures. In addition, the tubing is orbitally welded, an automatic process that produces a surgical weld with a higher success rate than a hand-weld.

Cryoquip welders carry out orbital welding of stainless steel tubing on a high-pressure ambient vaporizer.

As a result of manufacturing the new vaporizers locally, Cryoquip–Malaysia has been able to reduce both costs and delivery time. In the past, high-pressure vaporizers were manufactured at the company's headquarters in the United States. They then were shipped overseas, which typically took four to six weeks.

"With the addition of high-pressure vaporizers to our product line, we are able to offer not only more product and service options to our customers, but also quicker turnaround times. Customers will continue to receive the highest quality products, but with the added benefit of more complete, more convenient service," Chan said.

Cryoquip–Malaysia will continue to manufacture its low-pressure vaporizers, which are made exclusively of aluminum and operate at pressures up to 450 psi.

Cosmodyne celebrates 40 years as producer of cryogenic equipment

Forty years ago,

a small contractor in Southern California began producing cryogenic equipment for the growing industrial gas industry. Known as Cosmodyne, the company would eventually become a key supplier of cryogenic products for the commercial industrial gas and military industries.

In its early years, Cosmodyne concentrated on the manufacture of cryogenic products such as vaporizers, subcoolers, valves, and storage vessels. Within five years of its establishment, however, the company shifted its focus to air separation plants. Today, the company specializes in the production of this equipment for industrializing marketplaces.

Cosmodyne's first plants produced liquid oxygen and nitrogen for use at U.S. Marine expeditionary bases. Over the course of several years, the company produced 27 of these plants for the Marines.

As the benefits of this equipment became well-known, its uses spread. In the late 1960s, Cosmodyne supplied the U.S. Navy with air separation plants that could be used aboard aircraft carriers and subtenders.

Since then, Cosmodyne has become the leading supplier of separation plants for the United States Navy.

Cosmodyne's success during the past four decades can be attributed to the company's focus on quality. Each plant is designed using computer-aided design systems and manufactured using the latest welding, machining and fabricating equipment. In fact, Cosmodyne has the capability to test each newly constructed plant before being shipped to a customer.

"Because we control the building process from design to manufacture to testing to shipping, our products achieve the highest quality standards possible," said General Manager Dave Nunciato. "Cryogenic testing is a part of this carefully controlled process. We are one of the few companies in the industry with the capability to perform full cryogenic testing on site. By doing this, we can ensure the equipment works properly before the customer receives it. This, in turn, can minimize problems at the customer's site once the plant is shipped out."

Currently, Cosmodyne supplies the commercial industrial gas market with its ASPEN Series oxygen, nitrogen and argon generating plants. These plants are used by the major industrial gas companies mostly to develop new markets. With their compact size, portability, rapid on-site installation, power efficiency and short delivery, these plants satisfy special needs and minimize risk.

Even as Cosmodyne celebrates its 40th anniversary, the company is moving forward with plans to keep it at the top for another four decades. One project already in the works is the expansion of the company's ASPEN product line later this year.

"Our objective is to continue providing our customers with the equipment and service they need to get the job done," said Nunciato. "Cosmodyne will keep delivering the same high quality service that our customers expect from us."

COSMODYNE

A proud history

1958 Cosmodyne is incorporated.

1959 Cosmodyne developed a line of cryogenic products including pumps, vaporizers, subcoolers, valves, and storage vessels for the military and commercial markets.

1962 The company was selected by the U.S. Marine Corps to design and manufacture a transportable, low-pressure air separation plant to produce liquid oxygen and nitrogen for use at expeditionary bases throughout the world. Cosmodyne manufactured 27, 2.0 tpd plants for the Marine Corps, which were still in service and used in the Gulf War in 1992.

1968 Cosmodyne was selected by the United States Navy to design and manufacture a low-pressure LO_2/LN_2 air separation plant to be installed on aircraft carriers and subtenders. This is a continuing business and the company is the Navy's principal supplier of this equipment.

1980 Cosmodyne was selected by the United States Army to design and manufacture a mobile, reverse osmosis, 150,000 gpd sea water desalting plant. Cosmodyne supplied over 20 systems that were used during the Gulf War.

1986 Cosmodyne was selected by the U.S. Army to manufacture a 5.0 tpd, low-pressure LO_2/LN_2 air separation plant to be installed in the Kwajalein Islands for anti-missile and star wars development activities. Since that time, the company has manufactured over 25, 5.0 and 6.0 tpd plants for military and commercial customers.

1990 to present Cosmodyne entered the commercial industrial gas market with its GF and ASPEN Series oxygen, nitrogen and argon generating plants. The ASPEN Series ranges from 300 to 2000 Nm^3/hr or 12 to 75 tpd of liquid. The GF Series ranges from 4 to 6 tpd. The company has since delivered plants to every continent of the globe and has become a key supplier to most of the major industrial gas companies.

The ASPEN 300

A new Cosmodyne ASU is small in size, big on efficiency

When talking about air separation, bigger is not always better. That's why Cosmodyne has developed a new air separation plant that is ideal for small workloads. Introduced early this year, the ASPEN 300 combines the standard features of the company's popular ASPEN line in a compact arrangement. This best-selling line of ASUs also includes the 1000 and 2000 models.

"The ASPEN 300 is for customers who want a plant that is smaller than the 1000, yet is highly efficient and competitively priced," said George Pappagelis, Cosmodyne's Director of Sales and Marketing. "The 300 meets all of these requirements."

Like all standard ASPEN products, the 300 is pre-fabricated, transportable, and semi-automatic computer-controlled. Designed for outdoor operation, it produces 300 to 350 Nm^3/hr, which equates to about 12 to 13 tpd. Purity specifications are 99.6% for liquid oxygen and 10 ppm O_2 MAX for nitrogen. The plant's specific power at standard conditions is approximately 1.7 kw/Nm^3, and it can be configured for either 50 or 60 cycle electricity.

Industrializing regions around the globe use Cosmodyne's ASPEN plants to produce liquid oxygen, nitrogen and optional argon that are used in manufacturing processes. The success of these plants is due largely in part to their transportability and ease of installation.

"Since the ASPEN 300 plant is portable and easily relocated, it is ideal for developing a market and then moving to a new location," said Pappagelis.

The 300 model consists of a feed air compressor, a warm equipment module consisting of adsorbent vessels, a Cryoquip regeneration/thaw heater, a feed air refrigeration unit and a piping distribution system all configured into a 2 ft. ISO shipping container, oil-free

Continued on page 7

ACD hires a technical sales support rep

Brent West joined ACD in May as a Technical Sales Support Representative. His main responsibility is providing technical sales support to the European and Latin American markets, and various major customers on the East Coast USA. He will be traveling with the ACD and Cryogenic Industries regional sales teams to interface with customers and support their efforts.

Previously, West worked nine years at Process Services Corp. in Bethlehem, PA, USA. Most recently, he served as Manager of Business Development in which he was directly involved with installing and selling ACD pumps. He holds a bachelor's degree in business management with a minor in marketing from Spring Garden College in Philadelphia, PA, USA.

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The ASPEN 300
Continued from page 6

recycle compressor, ACD TB3000 turboexpander skid and cold box. In addition, the price includes an uninterruptible power supply for controls and instrumentation. Options include a cooling tower with pumping skid.

As an additional benefit to customers, Cosmodyne can test plants prior to shipping at its Torrance, Calif., facility. This procedure duplicates actual operating conditions and ensures the plant is fully operational, which can reduce downtime or unforeseen delays once the plant reaches the customer's site.

For more information, contact George Pappagelis at Cosmodyne, info@cosmodyne.com.

Cryoquip adds to its technical support staff in Europe

Cryoquip hired Vincent Schmitt in May to serve as an Application Engineer in its United Kingdom office. Responsible for providing customer support and coordinating the sales and application engineering efforts in Europe, Schmitt helps customers with equipment selection and sizing, informs customers about products, and offers technical assistance.

Prior to joining Cryoquip, Schmitt worked as a Mechanical Design Engineer for GEC Alsthom in England. He also served in the French military for one year. Schmitt holds a degree in mechanical engineering from Strathclyde University in Glasgow, Scotland.

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e-mail: Vincent.Schmitt@btinternet.com

Cryopump appoints a new General Manager

Walter Eggs was recently appointed as General Manager for Cryopump AG and Cryopump GmbH. Both companies are located near Basel, Switzerland.

Prior to joining Cryopump, Eggs was Managing Director for Wastec AG, a Swiss company supplying chemical and petrochemical industry customers with high temperature heating systems using oil or pressurized water as the heat transfer medium. Eggs notes that he has gone "from systems pumping fluids at +350°C to those pumping fluids at –190°C."

After receiving his degree in chemical engineering, Eggs worked at Ciba-Geigy AG as a project engineer for process automation. Later he joined Ikea, eventually becoming Director responsible for logistics, distribution and information systems.

Cryopump, a member of Cryogenic Industries, manufactures cryogenic pumping systems and provides service for the entire line of Cryogenic Group products in Europe and North Africa.

Walter Eggs

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Germany
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Fax: +49 7635 8965

e-mail: walter.eggs@cryopump.com

Calendar of Events

JUNE 3–4	CHEMICAL ENGINEERING CONFERENCE & EXPO Houston, TX, USA, +1 203.847.9599
JUNE 9–10	3RD ANNUAL SOUTH AMERICAN CHEMICAL INDUSTRY CONFERENCE Rio De Janiero, Brazil, +1 212.621.4978, www.chemweek.com
JUNE 22–23	6TH ANNUAL ASIAN PETROCHEMICALS SUMMIT '98 Thailand, +662.266.7767.8
JUNE 24–25	2ND INTERNATIONAL CONFERENCE ON GAS IN CENTRAL AND EASTERN EUROPE "CONSUMPTION AND TRANSIT" Corvinus, Budapest, +44 171 490 3774, www.asibsi.com
JULY 7–10	PUMPS & SYSTEMS ASIA '98 Singapore, +65 5343588
JULY 14–17	INTERNATIONAL CRYOGENIC ENGINEERING CONFERENCE West LaFayette, IN, USA, +1 765.494.6078
JULY 14–17	INTERNATIONAL CRYOGENIC INDUSTRIES CONFERENCE Bournemouth, UK, +44 (0) 1703 579762
SEPT 7–10	GASEX '98 Seoul, Korea, +82 2 563 8107-8
SEPT 14–15	LNG MARKETS & SOUTH ASIA NATURAL GAS Dubai, Saudi Arabia, +65 345 7322
OCT 5–7	SAFETY AND RELIABILITY OF INDUSTRIAL GASES SEMINAR New Orleans, LA, USA, +1 703.412.0128, www.nwsa.com

"Since you asked, I feel the strongest feature of my resume is that none of it can be checked."

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Coming soon:
The new ELF seal...
it may be small, but it reaps
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