

The ASPEN 1000

Cosmodyne's air separation plant features one of the shortest lead times in the industry

Cosmodyne's ASPEN 1000 air separation plant has continued to be the preferred plant in the industry for producing approximately 30 tpd output. Key to the success of the plant has been its transportability, ease of installation and precedent setting short lead time. These plants are currently deployed all around the world, producing liquid nitrogen, oxygen and optional argon by cryogenic distillation of atmospheric air.

The ASPEN 1000 is fully tested at the Cosmodyne facility prior to shipment. This unique testing procedure duplicates real conditions and makes possible the shipping and commissioning of a fully operational plant, with no down time or unforeseen time delays at the customer's facility. In addition to



An ASPEN 1000 undergoes full testing at Cosmodyne's manufacturing facility.

Purity Specifications			
		Max LO ₂	Max LN ₂
Liquid Oxygen	%O ₂	99.6	99.6
Liquid Nitrogen	ppmO ₂	5	5
Crude Argon (optional)	%Ar	98	—
Liquid Refined Argon (optional)	%Ar	99.999	—

providing on-site supervision for installation and commissioning, Cosmodyne can offer service and maintenance contracts to further ensure reliability and performance.

The ASPEN 1000 uses a modular design for deployment to remote locations. Rapid on-site installation and ease of shipping, handling and relocation are paramount. The plant system is self-

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The WILLIE pump

ACD designs a new pump for state-of-the-art cryogenic liquid distribution transport

The design of the new ACD "WILLIE" pump was customer-driven by Minnesota Valley Engineering (MVE). MVE approached ACD with a mobile fill station concept called ORCA. The plan called for extremely tough pumping requirements which drove the design and manufacture of the new WILLIE pump. The WILLIE required instantaneous starts (no cool down), endurance of over 5700 starts per year (without requiring

overhaul), and the pump needed to incorporate design features which are foreign to conventional trailer off-loading pumping applications.

In order to have the capability of instant starts, the pump is submerged in a vacuum jacketed sump and is continuously flooded in the liquid cryogen. The pumps suction is located near the bottom of the sump which has a liquid

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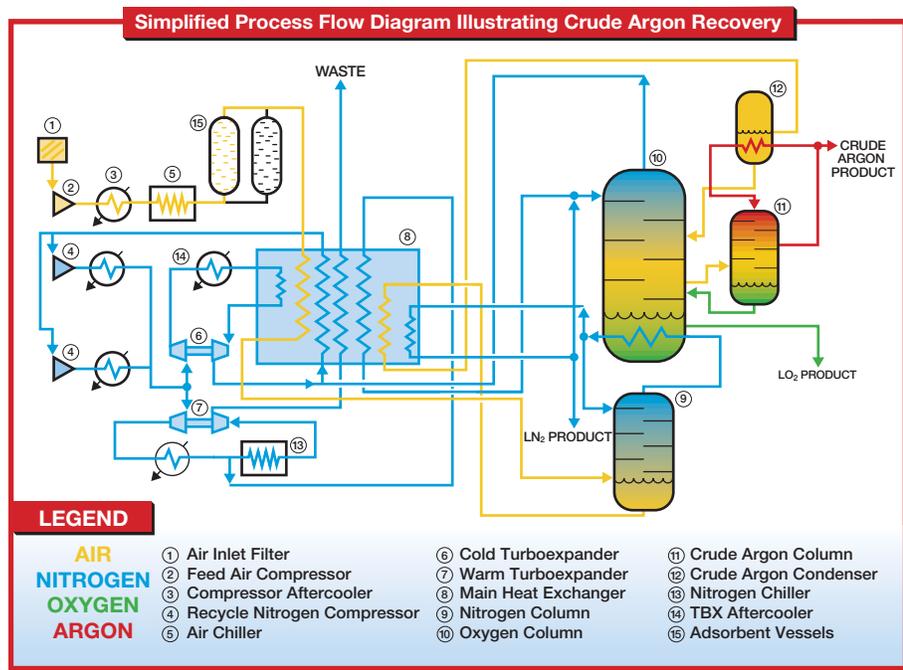
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contained and can be completely installed outdoors, requiring only a simple foundation. It comprises an air treatment module with master piping, electrical distribution manifold, air clean-up and refrigeration system, a

cold box, control room module and argon purification module.

For more information, contact George Pappagelis at Cosmodyne.



ASPEN 1000 Features:

- ▶ Automatic central PC control with computer graphic interface
- ▶ Computer graphic controls
- ▶ State-of-the-art analytical instrumentation package
- ▶ Dual, high performance turbo-compressors with removable cartridge style rotating elements
- ▶ Molecular sieve type air clean-up system
- ▶ Pre-wiring for single point connection

ASPEN 1000 Options:

- ▶ Crude argon production
- ▶ Refined liquid argon production
- ▶ Closed loop evaporative cooling system and pumping skid
- ▶ Batch product storage tanks
- ▶ Cylinder charging systems
- ▶ Liquid transfer pump systems
- ▶ Service and maintenance contracts

Air Products recognizes Cryoquip as an outstanding, preferred supplier

Cryoquip was recently awarded Air Products and Chemicals, Inc.'s (APCI) highest award for outstanding supplier performance. This award is given to only a few recognized companies that meet and exceed APCI's stringent supplier requirements. Of the over 10,000 vendors that APCI uses, only about 50 receive the highest rating, *Preferred*, and of this select group only a handful are recognized annually for outstanding performance. Cryoquip and APCI's shared commitment to the highest quality standards has enabled Cryoquip to consistently become one of these outstanding, *Preferred* suppliers.

Cryoquip has been involved with APCI's supplier program since its inception. In 1984 APCI created a Quality Management Process (QMP) to educate its suppliers about the quality issues key to their success with the company. Cryoquip has proved its allegiance to the principles of the QMP program:

- Demonstrated evidence of quality management as a way of life.

- Ability to consistently meet requirements 100% of the time.
- Ability to prevent errors from occurring through specific improvement projects.
- Satisfying customer's expectations and minimizing the total evaluated cost of materials and services provided.

APCI rates key suppliers throughout the year based on an assessment against standards of performance, commercial interface and support. Some of the categories and ratings of performance in the *Preferred* category include: *industry leader* in safety; *partner-like* in customer service; *honorable* in ethical business practices; *superior* in technical service/support; and *outstanding* in overall product/service quality. Cryoquip has repeatedly received this highest rating of *Preferred* Supplier. This means that the Cryoquip quality process is fully implemented and all key requirements are being met or exceeded.

"Cryoquip is committed to maintaining its position as the leading supplier of cryogenic equipment in the industrial gas industry. We are guided by the principle that our customers come first and we must continually improve our processes to meet and exceed their expectations. Our customer partner-ships facilitate this principle and ensure our continued success," said Cryoquip General Manager Frank Grillo.



The Air Products and Chemicals Outstanding Preferred Supplier Award was given to Cryoquip during an awards ceremony in June in Allentown, PA USA. Shown during the presentation are (left to right): Joe Kaminski, APCI Corporate Executive Vice President; Richard Oeler, APCI Vice President Energy and Materials; Patrick Billman, Cryoquip Applications Engineering Manager; Frank Grillo, Cryoquip General Manager; and Hap Wagner, APCI President and CEO.